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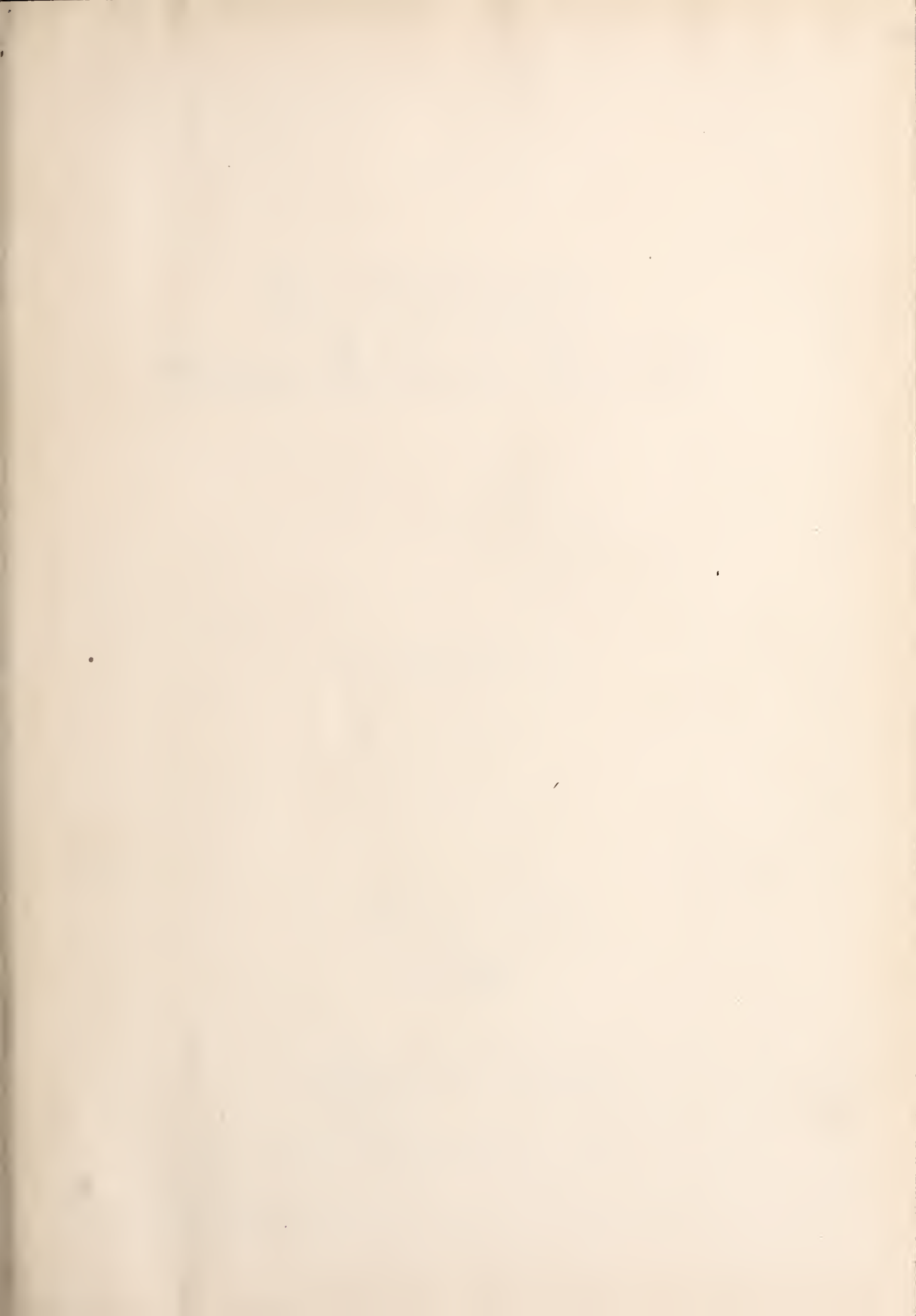
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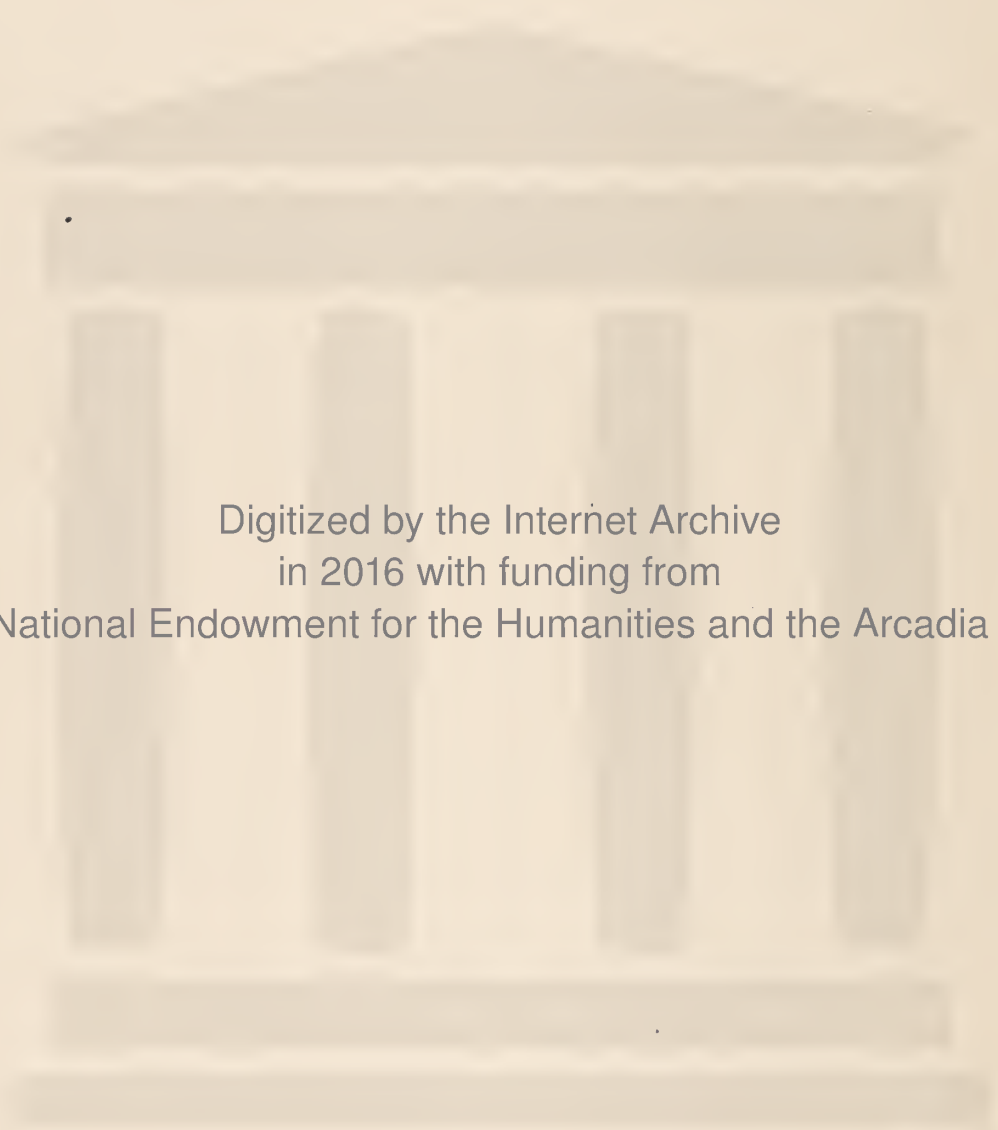
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INDEX TO VOLUME IX

Abdominal Trauma, C. H. Root.....	62	Physicians and Congress on Internal Medicine.....	151
Abscess of the Liver, B. R. McGrath.....	63	Appreciation, An.....	36
Acute Head Injuries, Chas. A. Hull.....	13	Average Value of the Physician's Time, The.....	326
Acute Head Injuries, J. W. Duncan.....	417	Blood Pressure.....	192
Adolescence Glaucoma, D. D. Sanderson.....	322	Blood Transfusion in Shock.....	326
A Few Facts About the Circulatory System, B. F. Lorance.....	47	Can Baby Contests Be Made More Efficient?.....	328
Alkalies as an Adjunct in Septic Surgical Cases, L. E. Penner.....	229	Cancer Campaign of 1923-24, The.....	450
A Much Neglected Disease, P. H. Bartholomew.....	315	Central States Pediatric Society, The, Rochester, Minneapolis, October 30-31.....	489
Annual Convention, 56th.....	271	Chicago A. M. A. Convention, The.....	282
Appendico-Biliary Syndrome, The, Max Emmert.....	184	Closer Organization and a Paid Field Secretary.....	34
Appendico-Biliary Syndrome: The, General Consideration, Max Emmert.....	477	Complexity of the Hay Fever Problem, The.....	194
Biological Action of X-ray, Edward W. Rowe.....	303	Conservative Treatment of Fractures.....	285
Blood Chemistry as an Aid to the General Practitioner, Ralph W. Webster.....	295	Controlled Diaphragmatic Breathing in the Treatment of Pulmonary Tuberculosis.....	452
Books Received.....	76, 200, 332, 376	Correction of Extreme Flat Foot.....	72
Borderline Mentality in the Community, The, Philip Work.....	1	Department of Public Welfare, The.....	451
Botulism in Western Nebraska, An Outbreak of, C. L. Cooper.....	391	Des Moines, Missouri Valley Meeting, The.....	410
Carcinoma of Antrum—Sarcoma of the Middle Ear, Wm. F. Callfas & D. T. Quigley.....	167	Diagnosis of Early Pulmonary Tuberculosis, The.....	112
Case of Kummel's Disease, A. J. E. M. Thomson.....	178	End of Volume IX, The.....	486
Case Report, C. R. Kennedy.....	30	Ethylene—The New Anaesthetic.....	193
Case Report of Pregnancy Complicated by a Large Ovarian Tumor, with Pleasing End Results, Earl C. Sage.....	230	Fifty-Sixth Annual Meeting, The.....	236
Case Report: Large Ovarian Cyst, Max Emmert.....	232	First President of the State Board of Health—Dr. James V. Beghtol.....	152
Case Reports Illustrating Early Diagnosis in, and the Results of Fractional X-Ray Dosages in the Treatment of, Carcinoma of the Stomach, W. L. Ross.....	466	Fungous Diseases of Man in Nebraska.....	152
Case of Tubal Pregnancy with Rupture of the Uterus, A. Henry A. Johnson.....	176	Germ of Cancer and a Curative Serum, The.....	150
Cholelithiasis During the Symptomless Stage, A. J. Brown.....	185	Improving the Race.....	451
Choreiform Affections in Children, The, Phillip Work.....	124	Influence of Preventive Medicine Upon the Practice of Medicine.....	411
Cleft Palate and Cleft Lip Cases, Wm. L. Shearer.....	160	Inter-State Post Graduate Assembly of America.....	490
Compensable Injuries Under the Workmen's Compensation Act, Czar C. Johnson.....	54	Intravenous Therapy.....	372
Complications of Gonorrhea, W. L. Ross.....	218	Journal Business Announcement.....	236
Concussion of the Brain Associated with Carbon Monoxide Poisoning, J. S. Welch.....	170	Legion Provides Hospital Rooms for Its Unfortunate Members.....	285
Conditions Produced by Infections of the Prostate and Seminal Vesicles, F. A. Brewster.....	367	Library of the University of Nebraska College of Medicine, The.....	239
Conditions Following Infections of the Rectum, Hal. C. Smith.....	360	Making Doctors at the University College of Medicine.....	486
Constipation in Children, E. R. Hays.....	386	Malpractice Suits.....	71
Contributions of the Slit Lamp to Our Knowledge of Anatomy—The Diagnosis and Pathology of Ocular Disease, Robt. Von der Heydt.....	384	Maternal Mortality in Omaha.....	238
Cooperative Medicine from the Standpoint of the Patient, H. M. Hepperlen.....	399	Medical Missionary to China.....	72
DEATHS—See Necrology.....		Medical Problems in Nebraska: Answers to Questionnaire.....	486
Dementia Praecox, Marie L. Grote.....	397	Medical Society Politics.....	110
Demonstration of a Pelvic Case, Chester H. Waters.....	172	Mental Disease and Crime.....	370
Diagnosis of Chronic Gallbladder Disease, The, J. E. Meyer.....	377	Misspent Life, A.....	70
Diagnosis of Diseases from Focal Infections of the Throat, E. I. Whitehead.....	365	Misuse of Insulin.....	371
Diagnostic Methods, Arthur D. Dunn.....	117	Nebraska Academy of Ophthalmology and Oto-Laryngology.....	237
Diagnosis of Renal & Ureteral Calculi, Carl H. Bastron.....	122	Nebraska Radiological Society.....	238
Diagnosis of Surgical Lesions of the Kidney, C. Emerson.....	212	Nebraska Section Meeting, Clinical Congress, A. C. S.....	190
Diagnostic Value of the Fontanel in Infancy, C. R. Spicer.....	29	Nineteen-Twenty-four Clinical Congress, The.....	488
Diagnostic Value of Pain Produced by Lesions of the Intracranial Structures, The, J. Jay Keegan.....	407	Paradoxical Shortening of the Coagulation Time of the Blood After Intravenous Administration of Sodium Citrate.....	373
Diarrhoea in Infancy & Early Childhood, E. V. Wiedman.....	256	Partitioned Skulls Found.....	282
Disturbances of the Gastric Function, H. J. Lehnhoff.....	51	Pemphigus Vulgaris with Findings in the Spinal Cord Suggesting the Etiology of the Skin Lesions: Report of a Case.....	239
Duodenitis, C. A. Roeder.....	252	Periarterial Sympathectomy.....	111
EDITORIALS—		Pioneer Nebraska Doctor Who Became a Land Owner and Financier, A.....	240
Acute Postoperative Dilatation of the Stomach.....	412	Poor Boy in Medicine, The.....	150, 240, 329
Annual Meeting of the American College of		Recurrences in Cancer of the Breast.....	36
		Red Cross Nurse in Her Proper Place, The.....	450
		Representative of a Race of Medical Men, A.—Dr. T. D. Thompson.....	411
		Rest in Tuberculosis.....	191
		Selling Medical Knowledge and Skill.....	111
		Simmons, Dr. George H., Editor Journal A. M. A.....	283
		State Medical Circulating Library, A.....	372
		State Medical Leagues.....	370
		Summer and the Infant, The.....	284
		Thyroidectomy: Further Modification in Technique.....	194
		Tonsillectomy in Its Relation to the Recurrence of Rheumatism.....	282

Toxin-Antitoxin	284	New Anaesthesia for Use in Major & Minor Urological Operations, A. — Preliminary Report, E. E. Angle, C. W. Hooper, Oswald Swinney, Lowsley	341
True and False Publicity of Medicine	70	Non-Operative Treatment of Goiter, A. Edward H. Ochsner	245
Uniform Practice Act, A.	412	Notes on Clinical Surgery, John E. Summers	77, 132, 209
Well Done, Thou Good and Faithful Servant!	329	Oesophageal Diverticula, W. J. Arrasmith	307
White Blood Cell Count in Acute Abdominal Conditions, The	327	Opportunities of the Present Day Surgeon, The, K. S. J. Hohlen	207
Young Doctor of Today, The	36	Orthopedic Cases, J. P. Lord	168
Eighteen Cases of Catarrhal Jaundice Following Influenza, J. Dwight Davis	222	Osteomyelitis of the Ilium, Frederick G. Kolouch	104
Empyema Complicating Pneumonia, J. D. McCarthy	95	Pain Due to Lesions of the Urological Tract, Edwin Davis	234
Erysipelatous Necrosis of the Eye Lids, H. Gifford	447	Pain in the Back, Robt. D. Schrock	214
Fear and Obstetric Efficiency, Inez C. Philbrick	41	Parkinsonian Syndromes, Harrison A. Wigton	345
Focal Infections of the Nose and Throat, E. C. Foote	363	Pelvic Pain in Women, Palmer Findley	270
Focal Infections Simulating Pulmonary Tuberculosis, W. I. Devers	356	Plain Facts About Diet, Edw. W. Rowe	142
Frontal Sinus Suppuration—Tic Douloureux, H. B. Lemere	164	Pneumonia in Children, Floyd Clark	443
General Management of Tuberculosis, The, O. M. Gilbert	6	Post-Operative Care, L. M. Stearns	436
Glands of Internal Secretion, The, C. A. Roeder	227	Post-Operative Parotitis, Chas. F. Heider	349
Goiter, Delmar L. Davis	174	Practice of Medicine and Some of Its Problems, The, Morris Nielsen	201
Granular Degeneration of Cytoplasm of Hepatic Cells, A Case Report, Earle E. Boyd	485	Preliminary Report On Experimental Nephritis Induced by the Use of Streptococci, George W. Covey	402
Gun Shot Wound of the Chest: Valvular Thoracotomy, Karl Connell	157	Presentation of a Case of Fracture of the Navicular Bone of the Wrist, Joseph A. Weinberg	233
Hemoperitoneum: Report of a Case, F. L. Wilson	65	Problem of the General Practitioner, The, John Buis	204
Hemorrhages of the Pregnant Uterus, Palmer Findley	289	Psychology of the Treatment of Tuberculosis, The, Miles J. Breuer	58
Heredity, O. M. Moore	403	Pus Case of Undetermined Origin, A. H. Hapeman	368
Hospital Standardization in Its Application, E. G. Zimmerer	429	Recognition of the Specific Hay Fever Pollens, Frances L. Long	147
Industrial Bone and Joint Disabilities, Czar C. Johnson	445	Roentgen Findings in Mediastinal Diseases, C. H. Ballard	438
In Memoriam	281	Roentgenological Findings of the Right Upper Quadrant of the Abdomen, A. P. Overgaard	264
Insulin, E. B. Downs	25	Roentgen Ray Treatment of Uterine Fibroids, R. W. Fouts	395
Internist and the Life Insurance Examination, The Miles J. Breuer	469	Report of Effect of Operation on Insurance Risk, A. C. Stokes	432
Intracranial Pressure, B. F. Williams	440	Report of a Case of Diabetes with a Peculiar Complication, C. C. Barr & Perry Allerton	30
Irregularities of the Heart, W. R. Peters	129	Sodium Iodide Intravenously, Lucien Stark	23
Kyphosis Due to Congenital Anomaly of Spine, J. W. Duncan	269	Some Cases of Corneal Disturbance, James M. Patton	183
Management of Placenta Praevia, The, J. P. Gilligan	17	Some Fallacies of the Intraglandular Injection Treatment of Goiter, Clement L. Martin	479
Marked Case of Diplopia Relieved by Operation, A. J. M. Bannister	171	Some Interpretations of Cardiovascular Signs, Stanley Clements	225
Mastoiditis and Its Complications, R. D. Martin	352	Some Phases of the Ulcer Problem, Frank Conlin	318
Megacolon, Charles J. Drucek	82	Some Surgical Diseases of the Right Kidney, W. J. Arrasmith	99
Melting Pot, The, Arthur Sweeney	107	Spleen with Reference to Surgical Treatment, The, Chas. E. Slagle	462
Membranous Enteritis, J. W. King	481	Spinal Pressure in Brain Surgery, K. S. J. Hohlen	457
Multiple Pregnancy—With Notes on Sixteen Cases, Arno A. Bald	324	Sporotrichosis—With a Report of a Case, J. F. Gardiner	408
NECROLOGY—		Syphilis of the Lung, Report of Case, Manuel Grodinsky	483
Ashby, S. F.	184	Three Cases: Orbital Infection—Foreign Body in Bronchus—Actinomycosis, John B. Potts	187
Bacon, F. G.	75	Three Cases of Osteomyelitis, A. C. Stokes	182
Baker, S. M.	456	Tonsillar Intoxication, Geo. A. Griot	136
Baldwin, B. B.	200	Traction Fracture of the Lesser Trochanter, J. Frederick Langdon	181
Bear, Alexander	199	Treatment of Hay Fever by Pollen Extract Inoculation, A. H. Webb	260
Boal, V. M.	156	Treatment of the Patient with an Ano-Rectal Complaint, The, Louis E. Moon	311
Brash, G. H.	156	Treatment of Pelvic Inflammations in the Female, Robt. T. Frank	333
Capell, W. L.	75	Treatment of Whooping Cough, The, J. A. Henske	6
Carr, E. A.	116	Tuberculosis in General Practice, Miles J. Breuer	138
Case, G. G.	244	Urate Soda and Cholesterol Nodules on the Tendons, A. F. Jonas	173
Davis, T. V.	75	Use of Insulin in the Treatment of Diabetes, The, Frank Conlin	89
Ervin, C. W.	376	Vaccination, A. P. Fitzsimmons	148
Fulton, J. B.	332	Value of the Cardiograph in Arrhythmias, The, Arthur L. Smith	19
Gandy, J. L.	288	Value of Osteotomy in the Correction of Gross Deformity, The, H. Winnett Orr	165
Garver, E. J.	494	Vincent's Angina, J. B. McPherson	28
Genung, F. C.	376	Vivisection, Michael G. Wohl	473
Guidinger, W. A.	40		
Hahn, F. W.	288		
Hammond, J. C.	156		
Harris, R. D.	288		
Hayden, Clara	116		
Jones, Wm. F.	456		
Knight, A. J.	456		
Lane, A. E.	244		
McConaughy, Robert	75		
Metz, P. H.	416		
Morse, R. H.	494		
Peterson, W. A.	332		
Phillips, W. H.	199		
Randall, H. L.	200		
Robinson, W. C.	40		
Schminker, J. C.	376		
Sheehy, J. P.	244		
Shull, H. A.	200		
Skelton, H. A.	40		
Spealman, J. F.	416		
Stevens, C. C.	156		
Stone, C. A.	40		
Wainright, J. S.	416		
Wegmann, Casper	416		
Weidner, S. S.	288		
Woodard, D. S.	40		
Nephrostomy and Drainage of Perinephritic Abscess Under Paravertebral Anaesthesia, Chas. F. Heider	484		

AUTHORS

Allerton, Perry	30
Angle, E. E.	341
Arrasmith, W. J.	99, 307
Bald, Arno A.	324
Ballard, C. H.	438
Bannister, J. M.	171
Barr, C. C.	30
Bartholomew, P. H.	315
Bastron, C. H.	122

Boyd, Earle E.	485	Long, Frances L.	147
Breuer, M. J.	58, 138	Lorance, B. F.	47
Brewster, F. A.	367	Lord, J. P.	168
Brown, A. J.	185	Lowsley, Oswald Swinney	341
Buis, John	204	McCarthy, J. D.	95
Callfas, W. F.	167	McGrath, B. R.	63
Clark, Floyd	443	McPherson, J. B.	28
Clements, Stanley	225	Martin, Clement L.	479
Conlin, Frank	89, 318	Martin, R. D.	352
Connell, Karl	157	Meyer, J. E.	377
Cooper, A. L.	391	Moon, Louis E.	311
Covey, G. W.	402	Moore, O. M.	403
Davis, Edwin	234	Nielsen, Morris	201
Davis, J. Dwight	222	Ochsner, Edward H.	245
Davis, Delmar L.	174	Orr, H. Winnett	165
Devers, W. I.	356	Overgaard, A. P.	264
Downs, E. B.	25	Patton, Jas. M.	183
Drueck, C. J.	82	Penner, L. E.	229
Duncan, J. W.	269, 417	Peters, W. R.	129
Dunn, A. D.	117	Philbrick, Inez C.	41
Emerson, C.	212	Potts, John B.	187
Emmert, Max	184, 232	Quigley, D. T.	167
Fitzsimmons, A. P.	148	Roeder, C. A.	227, 252
Findley, Palmer	270, 289	Root, Chas. H.	62
Foote, E. C.	363	Ross, W. L., Jr.	218
Fouts, R. W.	395	Ross, W. L., Sr.	436
Frank, R. T.	333	Rowe, Edward W.	142, 303
Gardiner, J. F.	408	Sage, Earl C.	230
Gifford, H.	447	Sanderson, D. D.	322
Gilbert, O. M.	6	Schrock, Robert D.	214
Gilligan, J. P.	17	Shearer, W. L.	160
Griot, George A.	136	Slagle, Chas. E.	462
Grodinsky, Manuel	483	Smith, Hal C.	360
Grete, Marie L.	397	Smith, Arthur L.	19
Hapeman, H.	368	Spicer, C. R.	29
Hayes, E. R.	386	Stark, Lucien	23
Heider, C. F.	349	Stearns, L. M.	436
Henske, J. A.	6	Stokes, A. C.	182, 432
Heppertlen, H. M.	399	Summers, John E.	77, 132, 209
Hohlen, K. S. J.	207	Sweeney, Arthur	107
Hooper, C. W.	341	Thomson, J. E. M.	178
Hull, Chas. A.	13	Von der Heydt, Robert	384
Johnson, Czar C.	54, 445	Waters, Chester H.	172
Johnson, Henry A.	176	Webb, A. H.	260
Jonas, A. F.	173	Webster, Ralph W.	295
Keegan, J. Jay	407	Weinberg, Joseph A.	233
Kennedy, C. R.	30	Welch, J. S.	170
King, J. W.	481	Whitehead, E. I.	365
Kolouch, Frederick G.	104	Wiedman, E. V.	256
Langdon, J. Frederick	181	Wigton, Harrison A.	345
Lehnhoff, H. J.	51	Williams, B. F.	440
Lemere, H. B.	164	Wilson, F. L.	65
Long, F. A.	34, 70, 72, 110, 150, 152, 236, 240, 282, 283, 326, 329, 370, 410, 414, 450	Wohl, Michael G.	473
		Work, Phillip	1, 124
		Zimmerer, E. G.	429

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CONTENTS

	Page		Page
The Borderline Mentality in the Community, Philip Work, B. S., M. D.....	1	Diagnostic Value of the Fontanel in Infancy, C. R. Spicer, B. S., M. D.....	29
The Treatment of Whooping Cough, J. A. Henske, M. D.....	6	Report of a Case of Diabetes with a Peculiar Complication.....	30
The General Management of Tuberculosis, O. M. Gilbert, M. D.....	6	Case Report, C. R. Kennedy, M. D.....	30
Acute Head Injuries, Chas. A. Hull, M. D....	13	EDITORIALS—	
The Management of Placenta Praevia, J. P. Gilligan, M. D.....	17	Closer Organization and a Paid Field Secretary	34
The Value of the Cardiograph in Arrhythmias, Arthur L. Smith, M. D., A. B., M. Di., F. A. C. P.....	19	Committee on Program.....	34
Sodium Iodide Intravenously, Lucien Stark, M. D.....	23	An Appreciation.....	36
Insulin, E. B. Downs, M. D.....	25	Important Notice—Call for Papers.....	36
Vincent's Angina, J. B. McPherson, M. D....	28	Recurrences in Cancer of the Breast.....	36
		The Young Doctor of Today.....	36
		Oculists, Optometrists and Optical Firms....	37
		“Dr. Nye of North Ostable”.....	38
		The Societies.....	38
		Human Interest Tales.....	39
		Necrological	40

THE BORDERLINE MENTALITY IN THE COMMUNITY*

Philip Work, B. S., M. D., Denver, Colorado.
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The recent war brought to our attention many facts of which we, as a nation, were either unaware or indifferent until confronted with the stress of a national emergency. Not since the Civil War has there been a comparable opportunity for a nation-wide survey. We learned, among other things, that our vaunted physical superiority was a myth. A shocking percentage of our young men were found physically unfit for military duty. Mentally we stood the test but little better than physically.

Having accepted, as a necessary prerequisite standard, the Binet Simon system of intelligence rating which classifies a mind as

potentially mature at sixteen years, it was found necessary to lower the bars at some army camps to ten years, in order to constitute troops from the personnel at hand.

This condition, and the inability of still another quota to adapt themselves adequately to the peculiarities of army life gave much concern. The failure of many more to re-adapt to civil life after army service has focussed general attention on a condition which we have always with us, but which is intensified by any period of stress.

The country has been cursed since the war with a wave of idleness, of economic discontent and of actual crime. Many causes are operative but the part played by the mental-ly abnormal individual is not small.

*Read before the 12th Councillor District Medical Society, Scottsbluff, Nebr., Oct. 15, 1923.

The common complaint heard for a year or two after the return of the troops was variously expressed. "Johnny is changed somehow." "Johnny can't get a job that suits him." "Johnny does not take any interest in things or he can't settle down, he is restless or he can't or won't hold a job."

Only in a measure was the war responsible for this. It was, if you please, the activating or determining cause. The real reason lay in the individual himself. The bulk of these misfits had always been defective, though they might have, through the indifference of the community, played out their little parts in the game of life and died, leaving behind their numerous and inferior progeny.

In some ways, the American people are the most tolerant or the most indifferent on earth. Too often, if a condition does not touch one's own affairs one lets it alone. As long as the mental defective or the insane commits no overt act or does not become a public nuisance he is generally ignored.

Insanity and mental competence are terms of law and are purely relative. Among the blind, the one-eyed are kings. In the last analysis it is public opinion alone, which determines who shall go to the state hospital. The community is both judge and jury. Those actively mentally deranged or those whose obsessions conflict with public policy, and the mental incompetent, unable to care for himself, are carefully and expeditiously lodged in suitable institutions for the duration of their ailment. Compared with the army of defectives at large, the number hospitalized is negligible.

Goddard⁽¹⁾ estimates 2% of our twenty million school children to be defectives. Other authorities place the rate variously from 0.25% to 4%. Goddard's figures give 400,000, not to mention those too old for school enumeration. It is not possible to hospitalize all these, nor in fact is it advisable. The bulk of the world's common labor is done by the moron or worse. Hosts of mental defectives, properly situated go through life without obvious conflict.

The feeble-minded, for our present consideration, fall into three great classes:

First: Those whose mental dullness precludes their attending to their physical needs, the idiot group; true custodial cases.

Second: Those whose mental threshold is sufficiently high to enable them, under fa-

vorable circumstances, to hold minor jobs, but whose limitations, suggestibility, mental inferiority to surroundings and general instability, preclude full social acceptance.

Third: The so-called moral imbeciles, often able to pass and sometimes to pass astonishingly well the formal intelligence tests, but who fail to meet the strain of social requirements through some innate defect in stability, judgment or responsibility. They have not either the ability, will or a sufficiently strong desire to do right under strain.

The first group is necessarily institutional. The second and third groups are not so per se, and are a constant social menace, at least potentially.

Exceedingly difficult to differentiate from the group of moral imbeciles is that scrap basket of psychiatry, the group of various constitutional psychopathic states. Their reactions are likewise those of inadequacy, of personal inferiority or of misunderstanding; in general of insufficient social adjustment. In fact, not uncommonly do we find a psychopathic state engrafted upon the stem of basic mental deficiency.

The special danger of the moral imbecile lies in the fact that to casual observation he is normal. He is often able to carry on for a considerable period and he is accordingly so accepted until a dereliction puts him beyond the pale.

Terman⁽²⁾ gives the following table of findings of intelligence based upon the examination of 905 children of assorted ages: That the percentages run high is in part due, I think, to the fact that the tests used and the ages assigned for them were originally worked out for a different race, the French, of different ancestral stock, temperament and environment. Terman considers any one testing 10% below the median proper for that age as borderline at least.

Testing 60% of normal.....	0.33%
Testing 70% of normal.....	2.3 %
Testing 80% of normal.....	8.6 %
Testing 90% of normal.....	20.1 %
Testing 100% of normal.....	33.4 %
Testing 110% of normal.....	23.1 %
Testing 120% of normal.....	9.0 %
Testing 130% and over.....	2.85%

This gives us over 11% of children who do not equal that elusive standard we call a normal. Many of these defectives, however, pass in the community for normal, being detected only by scientific testing.

Mental deficiency results from a stoppage of mental development, either from congenital causes or by acquired disease. It comes at the completion of potentiality or it begins where disease, such as meningitis, intervenes. The mental attributes, such as will, affectivity and judgment, all appear at different developmental periods.

The mental defective interprets life through an incomplete mind, he sees only part of the problem, his conclusions are inadequate and inaccurate because he lacks in the mechanism essential to perfect concept formation. Lacking the stabilizing factors of higher analysis his reactions are elemental, impulsive and infantile. Unhampered by ethical considerations his solutions are as direct and primitive as his emotions. Confronted with a situation beyond his grasp his reaction is typically childish. He may become incensed, antagonistic and emotional. Often revenge, elemental and impulsive, here enters the picture. His crimes are not those of premeditation so much as they are of impulse and opportunity. The physical idea of self preservation is the earliest reaction and the society fostered doctrine of ethical conduct the last. His reaction is often colored by the shallow ill-fixed hallucinatory or delusional constellation of the constitutionally psychopathic inferior.

Goddard⁽³⁾ says "Every mental defective is a potential criminal." True, so are we all. The distinction lies in the fact that the moral threshold of the defective is lower than that of a normal. Vast numbers of defectives are living comfortable law abiding lives because they have either not met the unsolvable problem or have turned from it into a path of less resistance and effort.

Goring's admirable work on the "English Criminal"⁽⁴⁾ gives the following data on the proportion of mental defectives among many men convicted of various crimes. He places the incidence of mental defect in the general population at 0.5%, much lower than believed to be the United States rate.

Convicted of:	Defective.
Firing of stacks.....	52.9%
Other wilful damage.....	22.2%
Arson	16.7%
Robbery with violence.....	15.6%
Unnatural sex offenses.....	14.3%
Blackmail	14.3%
Fraud	12.8%
Burglary	10.0%

Counterfeiting	3.0%
Embezzlement, forgery, fraud as trustees, etc.	0.0%

The following testimony was given in 1908 before the Royal Commission on the Feeble-Minded⁽⁵⁾:

"Against 130 out of 333 weak-minded prisoners, no previous conviction had been had, but for this absence of record their nomadic habits might account. Against 56, one conviction; against 28, two; the remainder varied from 4 to 105; one-half had been convicted from 5 to 10 times each. One hundred mentally defective prisoners at Stafford had a total of 1,104 convictions or 11 per man. In two Dublin prisons 12.21% were defective and previous convictions for the women averaged 44.13% and one woman aged 29 was serving her 236th sentence."

Punitive measures, as one would expect, have no deterrent value where there is no ethical sense to appreciate them.

A recent survey made by the American Legion⁽⁶⁾ shows approximately 20,000 ex-service men now in penal institutions. Examinations made in Wisconsin showed 60% of the veterans in one prison and 68% in another to have a mental defect, usually congenital.

Goring⁽⁴⁾ worked out the conclusion that in England 63% of mental defectives would ultimately be convicted of crime. Convictions under the more lax police system of the U. S. would be considerably less, but there is no evidence that our basic deficiency rate is any lower.

Remember please, that these figures, which might be duplicated indefinitely, do not as a rule include the defectives of the more markedly psychotic group. The borderline between mental deficiency with a psychopathic state and a true psychosis is tenuous indeed. Admitting this class, the figures become even more appalling.

It is impossible in a paper of this length to trace the life history of the defective through his earlier years but it is a rare case that does not show to the trained observer some warning of the future long before it is established. Knowledge of the immutable laws of heredity, a searching family history and careful scrutiny of the suspect will go far toward justifying a suspicion long before there is any proof. Bear in mind that the vast majority of these cases are congenital in origin and careful inspection of the family

becomes imperative. Neuropathic heredity is not always a similar heredity. Any disturbance of the psyche in either parent, even though slight, should lead to a suspicion of defect. Suspicion always falls promptly on the so-called "nervous" individual, the occasional worker, the migratory type, the non-productive visionary, the criminal and the alcoholic.

The majority of cases of level sufficiently high to escape the idiot rating, get along well enough till school age or older, though some of them from their earliest days are irritable, seclusive or unamenable to discipline. They are as a rule late in teething, walking and talking. They usually show more than the average number of the stigmata of inferiority. Less weight is now being put on the influence of forceps delivery and much more on the physical state of the parents at the time of conception. Acute alcoholization of either parent at the time of conception seems to have some toxic action on the chromosomes, affecting the resultant mentality unfavorably.

Oncoming mental defect is as a rule first noted in the school room. The pupil becomes dull, inattentive, abnormally mischievous or unresponsive to discipline. As he progresses in school his work wavers in character and fails, he is more easily diverted and is in general indifferent. He remains two or more years in a grade and makes no progress. He begins to absent himself from school, takes less interest in the activities of his fellows and seeks his associates among the younger children and the loafer or vagabond portion of the population. His unrestrained sex impulses take form in flagrant excesses, perversions or indecencies without restraint, care for concealment or remorse upon detection. Not infrequently his public life is terminated at this stage by an outraged community.

The first diagnosis of mental inferiority is almost invariably rejected by the parents with scorn. However, many of these children unacceptable in public school, soon appear in parochial or private schools. Ultimately their deficiency or their anti-social traits necessitates their leaving these places and either disappearing into an institution or taking some place in the social system. Another type of individual first comes under suspicion because of neighborhood mischief or repeated

petty lawlessness. Very often he is promptly hastened off to jail.

The bulk of the world's common labor is done by the mental deficient. A mentally deficient person is not, of course, per se a criminal, but it is certainly easier for him to become so than it is for the so-called normal. The defective does common labor for but one reason. He never rises above the first few steps of the economic ladder. He has not the capacity for more.

Much of the seasonal labor, such as answers the call of the nation's harvests, is of a low mental calibre. This type of work is ideal for the restless and unstable mind. It rarely calls for more than a strong back, there is constant change of location and vocation and the demand is such that the boss cannot afford to be overly critical. This type of person is more morally deficient than mentally defective. They see no wrong in jumping a contract, stealing transportation, sandbagging a brakeman or a pedestrian and in general living at the expense of the community in passing.

The outstanding characteristics of the defective in labor are his mental and emotional instability and his undue self-confidence. If he should find himself out of his mental depth he leaves without warning or excuse; the wrecked machine he may leave behind means nothing to him. He works only till he hears of a better job, or until his shortcomings evict him from his berth. He confraternizes to evil purpose. The higher types of mind develop paranoid ideas about labor conditions and create a state of bolshevism or syndicalism that may with these biased intellects go to any length. These people follow the course of least resistance always, naturally indolent it is easier to beg than to work, easier to steal than to beg. Being without insight they do not worry about the future. Without special stress they rarely develop well-formed psychoses though a shadowy paranoid state is common.

On the other hand we have also the slightly higher group who have accumulated and realize, to some extent at least, their social obligations. They get along varyingly well in minor capacities but never rise and are frequently quite paranoid about it. Lacking the innate ability to change the situation, they are only part of the picture rather than dominating it. They go on thus till chance puts on them a bigger load than they can

carry, through increased responsibility, financial stress or illness, when they break, either socially into crime or mentally into a psychosis.

We all have a definite mental load limit, though in the normal individual it is rarely even approached. Most of us do not fully develop our potentialities, let alone put them under strain. Not so with the defective. It requires all his equipment to get along at all. His limit is soon reached and in unusual conditions soon surpassed. He selects involuntarily and unconsciously the sphere in which he can function; if chance pushes him beyond he fails for he has no reserve. It is axiomatic that the mental attributes last attained are the least firmly fixed and in case of stress they are the first to break; hence the ethical faults of the defective.

I make no plea for the relaxation of the law to the end that these cases be left in the community, nor for any undue amount of sympathy, so prone to be misdirected. These are ipso facto cases for care, either custodial or penal. The first function of the penal code is the protection of society. It is not fair, however, that these cases be judged by the same standard that is applied to the proven mentally normal criminal. The army regulation that all offenders of a certain type should have a mental examination prior to trial might well be applied to civil procedure. The trial judge should have vested in him discretionary power to sentence to prison or to a suitable institution for defectives, in the latter case for life, to the end that society may be protected. This would not be an economic loss, quite the contrary. Experience has proven that the defective under supervision is capable of much labor, is often more than self-supporting, though a rank failure if left to direct his own activities. This would serve a dual purpose in the case of the female offenders whose greatest menace is their promiscuous sexual activity with resultant spread of the social diseases and the propagation of her kind.

The idea of sterilization is excellent. There are, in fact, no objections to it logically, but though it has already made its appearance on some statute books it is too utopian for the public in its present state of enlightenment to accept in toto.

In conclusion: A certain percentage of our population is too defective mentally to compete on an equal footing. These unfortu-

nates in addition to their deficiencies show a definite predilection to acts inimical to the public welfare. Many of them maintain in addition a biased outlook on the world which further colors their relationship with it. If it were practicable, which it is not, to hospitalize all these it would still, from an economic standpoint at least, be highly inadvisable. There appear but two solutions; one contrary to the dictates of public policy and opinion, as savoring too much of paternalism; the routine examination of all school children at a set age and the automatic segregation of the unfit. This would not be just, not always accurate, even if acceptable.

The other possibility, the systematic routine examination of all offenders of whatever degree or station in life, prior to trial and the segregation in suitable institutions, existing or to be created, of the mentally unfit. Many offenses are the product of recidivists or repeaters, the so-called chronic offenders. The savings from repeated trials of the same individual, who, let us call to notice, has not in all probability been a fully self-sustaining social unit since his last offense, would soon pay for the expenses incident to the psychological inquisition and the community would at the same time be kept purged of an uncertain and dangerous element.

REFERENCES

1. Goddard, Feeble-Mindedness, p. 6.
2. Terman, Measurement of Intelligence, p. 66.
3. See No. 1, page 514.
4. Goring Charles, The English Criminal.
5. Brit. Roy. Comm. on Feeble-Minded. 1908.
6. American Legion Report to Commander, 1923. In Re Insane in Prisons.

The closest examination fails to reveal any real scientific principle underlying the various cults or sects. The more we examine the less we find until we arrive at the central mystery of all, which is "nothing." We certainly make a mistake when we try to force these "bally hoo" practitioners to go to school and acquire a knowledge of anatomy and physiology and other fundamentals.—Am. Med.

Unless means are found for the establishment of small but well-equipped hospitals in some accessible point in every county, and unless these hospitals are accessible to all the qualified and reputable physicians living in the county, there will be no improvement in rural practice.—Dr. F. D. Smith (Jour.-Lancet).

THE TREATMENT OF WHOOPING COUGH

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Since the recognition of pertussis first published by Baillou⁽¹⁾ in Paris in 1578 and its clear description by Willis⁽²⁾ in England in 1658, various and numerous treatments have been advocated. Though this is one of the commonest of acute infectious diseases and found practically throughout the civilized world, as yet no specific treatment has been found. Not until 1906 was the specific organism described. Credit is given to Bordet and Genyou⁽³⁾, who first described the organism, and their findings were later confirmed by many investigators. In 1901 Sylvestri⁽⁴⁾ employed blood serum of convalescing cases in the treatment of pertussis. In 1902 Leuriux⁽⁵⁾ and Klimenko⁽⁶⁾ used serum obtained from inoculated horses. In 1917 Bleyer⁽⁷⁾ employed human serum with no specific action in cases of whooping cough. Since the discovery of the Bordet Gauyau bacillus the greatest interest has centered around the employment of vaccines. The reports of many investigators are most encouraging, among these Luttinger⁽⁸⁾, Shaw⁽⁹⁾, Huenekens⁽¹⁰⁾, Gray⁽¹¹⁾, Bloom⁽¹²⁾, Reynolds⁽¹³⁾, while Von Sholly, Blum and Smith⁽¹⁴⁾, could find no satisfactory evidence that the vaccine treatment possesses value. Huenekens and others recommended autogenous or freshly prepared vaccine. The writer believes that this is impractical because: (1) In early stages, when most needed, expectoration is slight and the bacillus cannot be procured. (2) Only in rare cases is enough sputum obtained to culture the organism. (3) The pure culture is seldom isolated. (4) By the time the vaccine is delivered for use the second stage will have started and consequently vaccine will be of less value. The majority of these reports were written prior to 1918. Dr. H. M. McClanahan and the writer used the stock vaccines during the period from 1917 to 1920 with no apparent beneficial results and discontinued its use until the writer's series of 85 cases during an epidemic of pertussis which began in January, 1923, and lasted several months. During this time practically all children in certain districts who were not immune by a previous attack developed whooping cough.

If we consider the mortality table prepared by Neuroth⁽¹⁵⁾ in 6469 cases in Vienna:

Age	No. of Cases	Mortality
1 year	1242	25.3%
2-5 years	3139	6.8%
6-10 years	1926	3.9%
11-15 years	135	7.4%
After 15 years	27	0

we will readily see that it is very important to use all the various methods at our command that will favorably influence the course of such a dreaded disease.

This report is made from the observation of private cases in families above the average in intelligence who wanted all that science could offer. At the time, the writer's two children developed a cough following exposure. Knowing from experience that the older child, granting that no complication occurred, would miss from 6 to 8 weeks of school, it was decided to use the vaccine, with the gratifying effect following the second inoculation that the cough practically subsided within seven days. They did not develop the severe paroxysm. Following the inoculation the children played with known whooping cough cases with immunity. The writer then advised its use. Mulford's sero-vaccine of mixed pertussin was used throughout, with an open mind, and the report is about as accurate as a report made from private practice can be. Each child was given 500 million first dose, doubled every second day, fourth dose 4000 million. Four doses were given in all cases with the exception of two. In all the 340 injections not one infection occurred. Many showed a slight febrile reaction for 6 to 12 hours. Iodine was applied to the arm, and syringe and needle were cleansed with alcohol. All of the cases were treated during the first six months of 1923 and the majority during the months of February and March. It was given to children exposed in families where others had the disease. It was advised during the incubation period following definite exposure, catarrhal stage and the first week of paroxysm. Eighty-five cases were given the sero-bacterin. Of these 43 were girls and 42 boys. The majority were under 6 years of age. The incidence of disease in 85 cases follows:

Incidence of pertussis as regards age:	
Under 3 months.....	5
3 mo. to 1 yr.....	11
1 to 2 years.....	18

2 to 4 years.....	20
4 to 6 years.....	13
6 to 8 years.....	14
8 to 10 years.....	4

Twenty cases were given the first inoculation prior to the catarrhal stage following definite exposure to a known case in the same family. Of these, fourteen developed whooping cough. In twelve of these cases the course was markedly modified; in two, no apparent effect was noted.

Forty-four cases were given the sero-bacterin during the catarrhal stage. Of these twenty did not develop the "whoop". In fifteen the paroxysm and vomiting were not marked. In nine no apparent effect was noted.

Twenty-one cases were given the sero-bacterin during the first week of the paroxysmal stage. In eighteen cases the paroxysms were farther apart, vomiting not marked. In three there was apparently no effect.

All of the eighty-five cases are alive six months later. No serious complications, as pneumonia, hemorrhages, etc., occurred. A minority of cases were given antipyrin or codein in broken doses in the evening to control the paroxysm and secure rest at night. All therapeutic measures were used with the exception of x-ray and local application through laryngoscope. The loss of appetite was noted in a comparatively few cases.

Dr. H. M. McClanahan and the writer during this same period, were also called in consultation in cases which were not treated, and in which complications occurred, and witnessed the fatal termination of 7 cases as the result of complication. The number of reported deaths in pneumonia in children under 5 years, as well as those in which the primary cause of pertussis was given, demonstrated that the epidemic was not a mild one.

The report of the Health Department of the City of Omaha during the same period showed:

Deaths from pneumonia, under 5 years.....	64
Deaths from whooping cough, under 5 yrs. 10	
Reported cases, ...	145

The writer is of the opinion that many of the pneumonia deaths reported were complications of whooping cough and that there were at least several times the number of reported cases.

These findings demonstrate conclusively that proper hygienic measures, intelligence

on the part of parents both to consult a physician at once and follow a definite outline of treatment prescribed which will make for comfort, will reduce the mortality rate whether or not vaccines are given. Many parents are of the opinion that the disease must necessarily go through its usual course and that science has nothing to offer. I believe that vaccines have their place with other therapeutic measures and should be utilized.

CONCLUSIONS

1. No harmful reaction or infection follows the administration of vaccines.
2. No serious complications or deaths were noted.
3. From reading the literature and personal experience I would advise the use of sero-bacterins, both as another method of prevention and as modifying the course of the disease.
4. The earlier the vaccines are given the better the results.
5. Drugs such as codein, antipyrin, belladonna and bromides have their place.
6. Hygienic measures and fresh air are important factors.

BIBLIOGRAPHY.

1. Geneva Edition 1742.
2. Path. Cerebri, Etc., Cap. XII, 1667.
3. Annal. de l'institut. Pasteur XX 731, 1906.
4. Gaz. degl. Osp. 1901, No. 14 Ref. Med. Woeh., 1901, XLVIII 2020.
5. La Sem. Méd. 1902, XXII, 233.
6. Arch. des Sciences Biol. de St. Petersb. 1912, XVII, 103.
7. Amer. Jour. Med. Science, CLIV 39, 1917.
8. Jour. Amer. Med. Assn., LXVII, 1461, 1917.
9. Pediatrics XXIX, 205, 1917.
10. Amer. Jour. Diseases of Children, XVI, 30, 1918.
11. Practitioner, C, 91, 1918.
12. Archives Pediatrics, XXXVI, 1, 1919.
13. Archives Pediatrics, XXXVI, 290, 1919.
14. Jour. Amer. Med. Assn., LXVIII, 1451, 1917.
15. Pfaundler and Schlossman, Hanb. d. Kinderkr, 1906. 1, 2, 871.

We must have friendship at least for our fellow-doctor, for until we do, our professional travels will continue to be over rough roads and rocky mountain sides.—Atl. Med. Jour.

The average doctor is not a bad man. I'll venture to say that amongst all of the professions, not even excepting the ministry, that of medicine shows a fewer number of crooks, unchristian workers, or criminals than any of the rest.—Atl. Med. Jour.

THE GENERAL MANAGEMENT OF TUBERCULOSIS*

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While the object of this paper is to deal with the general principles in the treatment or management of tuberculosis, it is difficult to avoid some discussion of the modern conception of the nature and tendency of the disease process under consideration, for as Celsus long ago remarked, "The dominant view of the nature of a disease controls its treatment."

As long as the disease was looked upon as being a "cough and an expectoration," so long were our principle efforts directed at these symptoms, nor did we progress much further when we recognized the fact that the air passages and the sputum therein were laden with the germ of the disease, and directed our efforts at destroying or combating these germs which, so far as this particular host was concerned, had had their day and were now in process of retirement.

But when, with the knowledge given us by Villemin of the infectiousness of the disease, by Koch of the exact nature of this infecting agent, by von Behring and others of how the germ gets in its work, and finally by the practical conception of Methnikoff, that in the last analysis this process consists of a combat between two forces, the one the invading bacillus and the other the individual cells of our bodies; then and then only did we begin to realize that our responsibility lay in two definite directions; one toward the intercepting of the prospective invader; and the other in so raising the resistance of the other army, the cellular host, as to repel them at their portal of entry; or once having entered, to relegate them to unimportant quarters and so hedge them about by defensive cells—finally forming fibrous or even calcareous envelopes—as to render them relatively innocuous; and even, if the dose be not too large or the virulence too great, to constitute them our allies, by creating a state of hypersensitiveness of the cells of the body, by virtue of which they are able to resist further infection, unless it be an overwhelming one.

However, this protective infection cannot be counted as an unmixed blessing, for it may, at any time within the life of the individual, by occasion of lowered resistance of the host, become an active process; so that that which

has been our friendly protector, becomes the means of our undoing.

It is now definitely recognized that, in spite of our best endeavors to prevent infection, by far the larger portion of mankind acquire this infection in childhood or adolescence and that in much the greater number of these it lies dormant until we die of old age, unless some unforeseen circumstance operates to render the cells of the host vulnerable to attack.

These circumstances usually consist of something which we would construe as lowering the resistance of the individual, either locally or generally.

According to this conception we can more readily understand why the child developed tuberculosis following measles or whooping cough—simply by giving occasion for an already existing, but wholly latent, infection to become an active one; rather than to try to account for it by an infection taking place at this time from without.

Much the same thing takes place following influenza, pneumonia or pneumonokoniosis.

In a somewhat different category would fall those cases which develop as a result of impairment of general resistance without reference to the local process. Of the many factors which enter into this the principal ones are undernutrition, overwork, poor ventilation, and absence of sunlight. Frequent pregnancies also play an important part,—especially the parturient state and prolonged lactation.

Formerly when upon the death of a husband after a prolonged nursing by a faithful wife, the latter showed evidence of tuberculosis, we said that she had contracted it from him, but now we have conclusive evidence that, in most instances, at least, she had, due to the long strain of nursing with the incidental worry, loss of sleep, neglect of regular meals, etc., lighted up her own infection.

Recognizing now, on the one hand, a condition of pure latency of infection, and, on the other, one of a definite disease process, it behooves us to consider a stage which lies on the borderline between these, which may be known as the stage of "smouldering embers"; during which there may be varying numbers

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of attacks of pleurisy, with or without effusion, obstinate bronchitis, periodic or persistent loss of weight and strength, with slight afternoon temperature, often just a "tickling throat cough" and not infrequently, "just nervous and rundown."

These symptoms are inclined to come and go for several years before a definite outbreak of the disease occurs; and if we go back and inquire carefully into the past history of our patients, it is surprising how commonly we get such a chapter in the history.

I have felt justified in going somewhat into the mode of development of the disease, because the first principles in the treatment consist in the recognition of its early or "threatening" symptoms, and taking our steps toward its prevention or cure before there is an advanced process. A favorite maxim of mine is that "it is much easier to stamp out a few smouldering embers than it is to put out a house afire."

I cannot forego this opportunity to make a plea for the earliest possible diagnosis, in order that the best results in treatment can be obtained.

If we accept this general view; i. e. of early infection, long periods of latency and finally of insidiousness and more or less intermittency in the development of the disease process; our manner of attack is necessarily somewhat influenced thereby.

Of course, the ideal to which we all look forward is absolute prevention of infection but this is an Utopia which is obviously not to be realized for many generations at least—if at all. So the immediately practical thing to do is to so limit this infection on the one hand, and so raise the resisting power of the individual on the other, that he may never pass beyond the stage of "latent infection." In fact many of our authorities hold that the ultimate solution of the problem will be by a universal mild degree of infection, thereby "vaccinating" so to speak, the whole race.

Col. Geo. Bushnell who had charge of the tuberculosis work of the army in the recent war, is very decidedly of this opinion; and in his recent book on the "Epidemiology of Tuberculosis" supports his thesis with a large degree of success. Dean Victor Vaughn at a somewhat recent meeting of the National Tuberculosis Association asserted that "we are gradually becoming a more

tuberculized but a less tuberculous race." However, for the present there is no danger of preventing infection too completely, and our best efforts in this direction should continue, especially as to the protection of infants and small children, for in such, is the infection most dangerous. Our tuberculosis associations with their professional and lay workers, are accomplishing a great deal both by way of preventing or limiting infection and by making the individual able to withstand such infection as may be inevitable. May we pledge them our best support.

However, much is to be accomplished by preventive measures, particularly for future generations, the greatest obligation which rests upon us, so far as results for those now living are concerned, is the recognition of those early or premonitory symptoms, in order that steps may be taken to halt its further progress, while the chances for so doing are so absolutely good.

The death rate has been cut in half since 1900 and I am confident that it can be halved again in the next twenty years by just a little more care, on our part, in heeding these lesser manifestations.

As an evidence of the validity of this contention I wish you could see, for comparison, the patients at Mesa Vista, an open air home, where we send mostly those who have been so fortunate as to avail themselves of a diagnosis in this borderland stage; and those at some of the other institutions where there are mostly those who have not been so fortunate or have not heeded the advice of their home physician. In the former they are most all being restored to health; in the latter they are mostly—not.

As a further evidence of what the practical effect of some plan by which individuals—especially of the most susceptible age so far as clinical tuberculosis is concerned—might be brought to their physician at a time when "the embers might be stamped out," I wish to relate our experience as influenced by the "draft board" examinations. During the years of 1917 and 1918, we had sent to us for treatment almost four times as many men as women, while during the years following, these proportions were gradually reversed, and for the past three years we have had only one-half to one-third as many men as women. Assuming the number of women as being relatively constant, there

can be but one conclusion, and that is, that by our boards having picked up these borderland cases and advised them as to the necessary steps to prevent their trouble from becoming a progressive one, these cases were "headed off" and the men who would have, in the usual course of events, been coming for treatment from two to five years later, are not having to come. Of course, this is in part accounted for by some of the men being treated in army hospitals, but only in small part. What a pity, that the women of this age, were not drafted, too.

One must, of course, admit the possibility of error in diagnosis in such a stage but even granting that we should be mistaken as to this low grade tuberculous infection being the main cause of the symptoms, can we imagine a patient with these general symptoms who would not tend to be benefitted by the general hygienic measure which we institute in the proper management of a case of tuberculosis?

The question naturally arises, what are these measures upon which we are insisting as being fundamental in the treatment of this disease? While there are many things which are important and helpful, yet more and more we come to appreciate what can be done by the fuller application of that therapeutic triad: rest, good food and fresh air—and the greatest of these is rest. Particularly is this true in this "land of plenty" where you can take good food reasonably for granted, and where the general rules of hygiene have become such common knowledge that bad ventilation is not very common. On the other hand, we are an ambitious and chance-taking people, who are still more or less imbued with the idea that in the presence of disease the proper thing is to "stay up and fight it off." Oh!, what hosts of tuberculous persons have gone down under that banner! Timidity may have slain its thousands but foolhardiness has slain its tens of thousands.

It has been said, and with a measure of truth, that every substantial advance that has been made in the treatment of tuberculosis in recent years, was in one form or another, an application of the principle of rest, either local or general.

It might be interesting to recall for a moment the development of these fundamental ideas of treatment and the relative import-

ance accorded to each in the various stages of evolution to our present position.

It is scarcely necessary to dwell upon the period when the custom was sweating, bleeding and confinement in a close room, in order that the cough might be lessened; but let us pass on to what we would now regard as the first rational step; that, taken by Brehmer in the Alps, when, in the early seventies, he proposed and put into effect the system of fresh air and exercise. This represents such a marked step in the right direction that we are glad to overlook the error of his having exercised patients with active tuberculosis.

It was not long, however, before Detweiler, one of Brehmer's assistants, noted that the patient, who got a broken leg or some other disability which forced him to rest in the fresh air, did much better than those who were exercising. So, he established a sanatorium to be conducted upon the principle of "rest in the fresh air."

He was almost immediately followed by Trudeau in the Adirondacks, though it is only fair to say that the latter was at first inclined to put at rest only the quite active cases. But, as an evidence of how his ideas changed along these lines with experience, may be quoted, his answer to a question by a London Journal, as to his attitude toward rest in tuberculosis; he said, "I have no doubt but what I have rested some patients more than necessary but I am sure that I never harmed anyone by this measure, while, on the other hand, I am convinced that I have permitted thousands to die from not having rested them sufficiently." This statement was made not long before his death and represented an opinion formed after 43 years of extensive experience in the treatment of the disease.

By rest, is not meant merely cessation from work, but lying down in the easiest possible position for the entire 24 hours, as long as there is an active process, especially with fever. The lessened amount of work thrown upon a diseased lung and the consequently lessened impairment of circulation, by this measure, is enormous. Nor, in the most active cases, is physical rest sufficient, but mental rest must also be obtained as far as possible, even to the extent of limiting company and conversation, also freedom from domestic or business cares, even in a supervising capacity, is imperative. This is probably one of the main reasons why patients

do so much better in a nursing home or some such regulated environment, than they do in their usual surroundings, but this may be due largely to the fact, "that most soldiers fight well en masse while they may be cowards when fighting alone."

Concerning the extent to which the fresh air measures may be carried, it is safe to assume that it is seldom carried out to a sufficient degree; yet, on the other hand there are occasional instances in which it is carried out with a tenacity that is harmful. I have seen patients in a New England climate lying in a drifting snow when it was bitter cold, "toughing it out" because they thought it was the thing to do. It is better that the patient be reasonably comfortable, though comfort must not be taken too literally by the timid.

With rare exceptions we keep our patients in the open air all of the time except while dressing, bathing etc. They sleep and eat on outdoor porches or sun parlors and spend as little time in a warm room as possible.

In returning to the subject of physical rest, we will recall that in 1820 Dr. Carson, an Irish physician noted that in two or three cases where an accident had caused the collapse of a diseased lung, by permitting air to enter the pleural cavity, the lung was inclined to heal, and he went so far as to produce collapse in the lung of a dog, but the procedure seemed so radical, with the means then at hand, that it was all but forgotten until revived in the late nineties by Forlanini of Rome and by Murphy in this country. This has now come to be recognized as one of the most lifesaving measures in moderately advanced though largely onesided involvements. However, it is by no means limited to unilateral cases, for a few of our most striking results have been in cases, in which we hesitated to undertake it on account of the extent of the process in the other lung. However, in many cases in which pneumothorax was most desirable, it could not be accomplished on account of extensive pleural adhesions, so in the past few years, various surgical procedures have been resorted to with considerable success in properly selected cases. These procedures consist of one of two measures; the interfering adhesions are obliterated by the open method of Brauer or by the closed method of Jacobeus, thereby permitting the pneumothorax to proceed as usual. The other method consists of causing

the chest wall, by one means or another to fall in upon the lung. This method is surprisingly successful but has the drawback that the wall must remain in this position, although this is not nearly so deforming as one would suppose.

Another method of lung rest suggested by Webb is that of having the patient lie almost wholly upon the side on which the most active trouble exists. Both X-ray observation and clinical experience suggest that this gives the lung a degree of rest that is well worth while.

Next to these various measures the most important procedure which has come into use in recent years, is heliotherapy in one form or another. However, it has the drawback that it is not applicable in active pulmonary cases. Its greatest usefulness is in the field of bone, joint, gland, peritoneal or intestinal forms of the disease. It is carried out by means of natural sunlight or by that of the mercury-quartz lamp. The latter has the advantage of having the heat rays largely eliminated and the violet, ultraviolet and actinic rays intensified, thereby increasing the desired effect and of making it applicable in cases that are too sick to bear exposure to the sun's rays. It has the further advantage of being accessible regardless of cloudiness, and it can be used with a greater degree of privacy than can sunlight.

On the whole we have found them to be a most useful adjuvant in treatment.

As to diet, there has been a bit of reaction against indiscriminate overfeeding but it is still rather firmly held that there should be a slight hypernutrition, especially so far as the proteins are concerned. We still insist upon a moderate amount of milk and eggs though we seldom exceed four glasses of the former and three or four of the latter, except for special reasons and then, usually for only a short time. The vegetable proteins are also coming to hold a higher place in our estimation. A moderate amount of fat is generally required—especially the yellow fats since they are richer in the proper vitamins.

There is also a slight tendency to return to small doses of codliver oil since its vitamin content has been found to be important. However, the much advertised palatable varieties are usually largely deprived of their vitamins.

The subject of climatic treatment I approach with a good deal of diffidence, for I am not unmindful of the difficulty of treating it without bias.

There have been some very exaggerated claims made for various climates and, on the other hand, some evidence of lack of appreciation of climatic aid. This, like all other therapeutic aids, should be given its proper place. It is far better to have a patient in any reasonable climate doing the right thing, than in the best climate on earth, doing the wrong thing. However, all other things being equal, there is no question in the minds of medical men who have really investigated the subject, but what the proper climatic aid gives the patient a materially increased chance for restoration to health.

It is difficult, if not impossible, to adequately explain what such a climate is and how it produces its effects.

It is usually associated with moderate altitude, but not necessarily so for a climate is occasionally found without elevation which possesses practically all the qualities which are deemed helpful.

These properties are in the main low humidity; a high percentage of sunshine with its natural corollary, a low percentage of cloudiness, marked diurnal variation of temperature, a soil which absorbs moisture, and an abundance of actinic rays in the atmosphere. This latter is most particularly found in the higher altitudes inasmuch as the heavier lower stratum of atmosphere largely filters them out.

The Anglo-American expedition working on Pike's Peak in 1911, showed that there is not only a material increase in red-blood corpuscles and hemoglobin,—relative and absolute—but a marked increase in the lymphocytes—which are now generally conceded to be the type of corpuscle which protects us against tuberculosis. These processes are apparently due to the increased hyperemia of the bone marrow which, as Zuntz has shown, is produced even in a balloon ascension.

This commission, however, regarded the most important change of all as being the increase in the capacity of epithelial cells of the alveoli to take up and utilize oxygen.

One thing that has caused doubt in the

minds of thoughtful men, is the fact that the rarefied air of the higher altitudes inevitably necessitates the utilization of a larger volume of it in order to get the required amount of oxygen,—this being inconsistent with our demand for rest. This criticism is a just one and the difficulty must be counteracted by the greater degree of rest of the patient. This can easily be done inasmuch as we use only about 10% of our lung-volume capacity when at absolute rest.

It is often asked if there is an increased tendency to hemoptysis in the higher altitude. I believe there is if the patient exercises injudiciously upon arrival, but not otherwise.

Perhaps our best criterion as to benefit which climate confers is the extreme rarity with which a native Coloradoan develops tuberculosis.

As to drugs, there is a limited but definite field, but it should always be understood that they play an entirely secondary part to the proper hygienic measures and the regulation of one's daily regime.

Sodium cacodylate and iron are, perhaps, the most generally useful, the former tending, particularly, to increase the lymphocytes, which are so important in the battle against the tubercle bacillus. Our old-fashioned Fowler's solution and nux vomica are sometimes useful. Hypoacidity is not uncommon and calls for hydrochloric acid. Tuberculin is a most useful remedy in properly selected, mostly inactive cases, but needs to be most judiciously given. Of course, we are looking forward with hope to Dreyer's "defatted" tuberculin. The experimental work has been most encouraging and the reports most conservative, but it is too early to pass judgment upon it and, like all other remedies, too much must not be expected in advanced cases.

Sedatives, of course, have their place, where cough is excessive and exhausting, but should be used with caution. It is surprising what a drink of hot or cold water or a halfspoonful of aromatic spirits of ammonia, especially when backed up by some will power, will do toward controlling a cough.

So while we should keep our eyes on the stars and look for new remedies, we must keep our feet on the solid earth and make use of the measures of proven value.

ACUTE HEAD INJURIES*

Chas. A. Hull, M. D., Omaha, Nebr.

The mortality as a result of brain injuries is very high. In a report published in 1916 of the Cook County Hospital regarding 1,000 consecutive cases, the mortality was 53%, which causes us to appreciate the fact that this branch of medicine is not keeping pace with the others and that a full understanding of the pathology and symptoms must be had if we are to lower this percentage. It is a fact, however, that the clinical picture is better interpreted today, and we are saving lives by knowing when not to operate.

Naturally, we must exclude about two-thirds of the cases which have no intracranial pressure and in which, therefore, no operation is indicated. Depressed fractures of the vault should always be elevated. We have two periods in head injuries, when no operation should be attempted, first, when severe shock is present very soon after the injury, and second, in medullary edema and collapse. If we recognize and avoid these two extremes (and we can in every case) then we will not add the shock of an operation to an already shocked patient and neither will we try to do the impossible by operating upon an already collapsed medulla.

The treatment of brain injuries has been mismanaged by our thinking that the prognosis and treatment depended upon whether there is a fracture of the skull or not. Before the X-ray became so generally used, I think patients received more rational treatment than during recent years, for then we depended on clinical symptoms, but with the advent of the X-ray we cast these aside and rushed the patient to the X-ray room. Today we know severe brain injuries may be independent of skull fractures and that a fracture need not interfere with our expectant treatment, and oftentimes drainage of blood and cerebrospinal fluid through the lines of fracture relieves and carries our patient through a period of high intracranial pressure. So to advise an operation just because there is a fracture (unless depressed) is not advisable no matter how long the line of fracture.

On the other hand, not to advise an operation when high intracranial pressure is present in the absence of a fracture, is also

to be condemned, and it is in this class of cases that a great number of mistakes are made, for in patients in middle life or over, accompanied by arteriosclerosis, nephritis, alcoholism, etc., severe head symptoms are often seen. If possible, however, plates at different angles and planes should be taken of all head injuries, for it gives an accurate diagnosis, shows depressions which must be raised, and aids us in making a prognosis.

If paralysis of the cranial nerves is present without an increase of intracranial pressure, there is an injury of the nerves themselves, and if paralysis of the extremities, the usual cause is a contusion or laceration of the brain substance. The third, fourth, sixth, and seventh are the cranial nerves usually involved, the lesion being either a division giving permanent disability or a pressure due to hemorrhage which is only temporary and clears up in a few weeks. Therefore, it becomes self-evident that in these acute paralysis without intracranial pressure, an operation is not indicated and should never be attempted. (It might be well to mention that a small cortical hemorrhage may cause a monoplegia without increased intracranial pressure which at some later time, after full investigation, might be benefited by an operation.)

TYPES OF FRACTURES

(1) Direct. Due to direct violence and in which all or any of the tables of the skull may be broken. It is this type of fracture in which we are liable to find depressions and where the X-ray is a valuable aid.

(2) Indirect. Usually not depressed, but a linear fracture reaching from the point of contact to some other portion of the skull and usually toward the base.

Many theories have been advanced to explain the so-called fracture by contra-coup and I think it is most clearly explained by the bursting effect of injuries of the cranial cavity. If the head is forcibly struck against a hard object, the point of contact tends to be approximated to its pole on the opposite side and so mechanically there is a tendency for a line of fracture in one of the meridians extending from the point of contact to its opposite pole and as the base

*Read before the Third Councilor District Medical Society, Table Rock, Oct. 23, 1923.

is weaker than the vault, the line of fracture would travel toward this point.

SYMPTOMS AND SIGNS OF ACUTE BRAIN INJURIES

SYMPTOMS. (1) Headache varies in intensity and kind but usually is of a throbbing character and practically always present. It is due to pressure on the dura and caused by an increase of cerebrospinal fluid or a hemorrhage. The cerebral edema may be due to an increased secretion of cerebrospinal fluid by the choroid plexus or a cessation of excretion into the veins and sinuses. This pain usually decreases in intensity as the fluid is absorbed by the veins, but if it persists and is combined with other symptoms, it may be necessary to do a subtemporal decompression in order to relieve the pressure.

(2) Nausea and vomiting. We see this symptom very often and too much importance must not be placed on its presence. It is always present in shock whether psychic or traumatic and is no index of intracranial pressure except in extreme cases and in lesions around the medulla.

SIGNS. The local signs of head injuries are numerous and while taken individually do not indicate severe head lesions, but must be carefully studied and investigated. Ecchymosis about the orbits and mastoid regions, and bleeding from nose, ears, or mouth may be caused by local injuries, yet any one of them may indicate a fracture or severe brain injury. If cerebrospinal fluid is seen then a fracture is certain and ecchymosis around the eyes and mastoid without trauma are suggestive of basal fracture. An ecchymosis of the scalp would not lead one to diagnose a fracture, but if the blood is subpericranial then a fracture is very possible. This is particularly true in the temporal region and careful bimanual examination in this region will often reveal a crepitus or crackling due to the blood being confined under the temporal fascia. These suspicions are confirmed or disapproved by good, clear, stereoscopic X-ray plates. But let me repeat that whether there is a fracture or not the treatment of these patients remains the same, for the thing that kills our patients is high intracranial pressure.

GENERAL SIGNS

(1) Shock. Very few cases of cranial injuries occur without some degree of shock

being present and it is the exception for brain injuries of even the slightest severity to occur without shock being a complication. Often the shock in brain injuries is so severe that the patient is unable to survive and it is in these cases of extreme shock that all our energies should be used to combat and overcome it. No prolonged examination, but immediate measures should be started to combat the shock, such as external heat, enematas of hot coffee, quiet and sedatives for restlessness when necessary. Unconsciousness may or may not be present. The skin is cold and clammy. The pulse is frequent, varying from 120 to 140, irregular and thready. Temperature subnormal. The respiration is increased ranging from 30 to 50 and at times very shallow. Blood pressure low, 100 to 110. This period of shock usually has disappeared in 12 hours and the entire picture is reversed. Temperature normal or plus. Pulse rate normal or slightly increased. Respiration and blood pressure normal. If the shock is so severe that the patient fails to rally, an acute edema of the lungs causes an early death.

To differentiate between shock and medullary collapse is sometimes difficult; but with the temperature record and clinical history, one is usually able to tell, for, if the patient is in a stage of medullary exhaustion, there probably has been some period when the temperature and pulse rate have been quite low, which is later followed by a frequent pulse, rapid respiration, high temperature, and low blood pressure. When the lesion is subtentorial, medullary exhaustion and collapse always come early and in extreme cases are followed by an early death.

(2) Temperature. Too much reliance cannot be placed upon the temperature record in head injuries. With the other symptoms it helps form a clinical picture which shows us in what stage the patient is, but does not in itself indicate the degree of intracranial pressure except in exhaustion of the medulla and it is then too late for interference. Patients with head injuries seldom have a normal temperature during their early convalescence, usually varying from 100° to 101°, depending on the condition of the patient.

(3) Pulse. During the initial shock the pulse rate is increased but gradually returns to normal as the shock disappears; however, should it reach 50 or 60 we must recognize

it as a danger signal and that a certain amount of intracranial pressure is present. Occasionally we see a case of high intracranial pressure with a normal pulse probably due to some disturbance in the controlling mechanism of the medulla.

We must not be deceived by a full strong pulse as the rate decreases, for this is only an effort to overcome an anemia of the medulla which has occurred as the result of the increased pressure.

(4) Respiration. As has been stated, the rate is high in the stage of shock but as this subsides it comes to normal and remains so unless the medulla becomes compressed, when the Cheyne-Stokes type of breathing appears, which in some cases is only two or three per minute. In case collapse of the medulla comes on early, there may be no interval between the shock and collapse and during the entire time there may be both rapid pulse and respiration.

(5) Blood Pressure. When the medullary collapse comes on early the blood pressure may go quite high, 190 to 200, accompanied by a slow pulse and respiration rate, showing an intense intracranial pressure which if not relieved will end in a rapid death. Generally speaking, blood pressure is an uncertain symptom and very dangerous if we depend upon it as a guide for operation, for, as stated above, the intracranial pressure must be severe to cause a very marked increase in the pressure.

(6) Paralysis. If there are no symptoms of intracranial pressure and no depressed fracture, then a central paralysis, which is usually only a weakness of the extremities, is no indication for operative interference. If, however, signs of pressure do appear or after a few days the paralysis does not show signs of improvement, then an operation would be indicated over the region involved.

When an extensive laceration of the brain occurs involving a motor area, a large localized edema will occur which may cause intracranial pressure extensive enough to demand relief. However, unless the fracture is depressed over a motor area, compressing the cortex or there is an intra or extra dural clot, we seldom see a fracture of the skull cause paralysis of the extremities.

Aphasic symptoms sometimes occur when a clot lies under the dura pressing on the speech center but this is exceedingly rare.

The indications for operation do not depend upon the presence or absence of paralysis and one must not be lead to faulty conclusions and open a skull for a small localized edema or laceration when the case would probably have done better under the expectant plan of treatment.

(7) Unconsciousness. High intracranial pressure does not always produce unconsciousness, but if a patient with a head injury remains unconscious for a considerable time we are reasonably certain of high intracranial pressure. In the majority of cases where slow hemorrhage has occurred accompanied by edema, which has been confirmed by eye examination, spinal puncture and operation, if we read over the previous history we find the typical picture, viz: Tiredness, drowsiness, stupor, coma, and unconsciousness.

(8) Reflexes. In mild degrees of shock we may be unable to elicit the superficial skin reflexes while in severe or extreme shock both superficial and deep may be absent. If intracranial pressure occurs, then all reflexes are increased, including a double Babinski which may persist for weeks or months.

A thorough neurological examination should be made in all cases in an effort to locate the exact site of the hemorrhage. It is in this class of cases that judgment should be used in the site of operation. A decompression to relieve the pressure is much safer than to trephine over an active area, for if the intracranial pressure is marked a hernia of the brain with destruction is almost sure to result.

(9) Pupillary Changes. The pupils are slightly enlarged in head injuries during the time of the initial shock, but if the shock be more severe a widely dilated pupil will be one of the striking symptoms of the examination unless there is a definite increase in intracranial pressure. The pupils come back to normal after the shock has disappeared. A pin-point pupil indicates a slight hemorrhage or cerebral edema which produces an irritation with the resulting small pupil, but if it increases and the pressure becomes high so that the cortical nerve cells are compressed then the narrowing gives way to dilatation and slow reaction to light. An irregularity is due to some disturbance of the third, the cervical sympathetic or to pressure on one of the hemispheres. It is

not rare to find it temporarily compressed with a widely dilated pupil, which clears up in a few weeks. With the history and clinical picture the pupillary signs are of great value, but without increased intracranial pressure it is only an index of a temporary or permanent lesion but no indication for an operation.

(10) Ophthalmoscopic Findings. Head injuries, choked disk, and operation were the three words that spelled ruin in most of our head cases a few years ago, but now we know that to wait for a papillo-edema of two diopters or more is poor judgment, for when this is present we may have medullary compression or edema and an operation will only hasten the end. A dilatation of retinal veins with a blurring on the nasal side of the optic disk indicates increased pressure but may still be treated by the expectant plan, but if the nasal and temporal sides are both blurred or obscured there is a papillo-edema beginning and an ideal time to relieve the pressure by a sub-temporal decompression has arrived. The above changes are not observed inside of four to six hours after the injury unless the hemorrhage is large and rapid.

(11) Lumbar Puncture. This procedure is considered dangerous by many men, but if one goes into the clinical story it is found in many fatalities that things other than the spinal puncture entered into the cause of death. We do it as a routine, after the shock has disappeared, and have had no bad symptoms. The normal pressure of the spinal fluid is five to nine millimeters, and over twelve millimeters can be considered as pathological. The presence of free blood in the spinal fluid is only a sign confirming our diagnosis of an intracranial injury. Its absence may be misleading, for if there is a blockage to the normal descent of the fluid, of course there will be no blood, and unless we are aware of this fact our conclusions may be faulty. We feel, however, that the measurement at puncture is of great importance and should be done as a routine measure.

Some years ago Kocher by recognizing the signs and symptoms of intracranial pressure in acute head injuries divided it clinically into four stages:

1. The first stage of compression being the medical or stage of compensation in which case the intracranial pressure expels

as far as possible the excess of cerebrospinal fluid and as the brain is noncompressible it next presses on the blood vessels, as the veins are under the least pressure they become distended, giving a venous stasis with the usual symptoms of headache, drowsiness and stupor. In this stage the eye changes are slight, and only a slight rise in the spinal fluid pressure, so no operation is indicated and the expectant plan of treatment is followed.

2. The second stage of compression in which all the symptoms have progressed is the ideal operative stage. Here the medulla is compressed and becomes anemic, giving rise to slow pulse and a slight rise in the arterial blood pressure. The headache is more severe due to the venous stasis being more pronounced. A definite cyanous appears and with the ophthalmoscope the retinal vessels greatly dilated, with or without edema of the optic disk, will be seen. These are positive signs of intracranial pressure and indicate immediate operation before medullary compression has occurred.

3. The third stage of compression or imperative operative stage of medullary compression. Here we have bulbar signs of compression, for as the intracranial pressure rises an anemia of the medulla increases, so at times the intracranial pressure may equal the capillary pressure of the medulla. Fortunately, the medulla is so regulated in its circulation that when an anemia occurs it stimulates the vasa motor centers and the general blood pressure is raised and more blood forced into the medulla, which temporarily overcomes its anemia. A circle of up and down waves is established and if the condition is not relieved the patient fails to rally from one of the down waves and death quickly follows.

4. Stage of compression, non-operative or moribund stage. Here the medulla becomes so fatigued, its regulating power no longer controls the vasa motor stimulation and the general blood pressure falls while the intracranial remains the same or increases. It gives a sad picture: Cheyne-Stokes respiration or respiratory paralysis, frequent irregular heart action, dilated pupils, profound coma, muscular relaxation. These form a clinical picture showing medullary exhaustion and collapse from which no patient recovers, operation or no operation.

CONCLUSIONS

1. A severe condition does not depend upon the presence or absence of fracture.
2. Intracranial pressure is the important point to be diagnosed.
3. Intracranial pressure is diagnosed by

eye and spinal fluid pressure findings. The temperature, pulse, respiration, and blood pressure being valuable adjuncts.

4. Intracranial pressure must be relieved at the proper time if we wish the treatment of head injuries to stand in the fore with other branches of medicine.

THE MANAGEMENT OF PLACENTA PRAEVIA*

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It can be said that placenta praevia, while not a common condition, may be one of the most formidable which we are called upon to treat.

Statisticians differ as to its incidence, but the fact remains, once called upon to care for a case of this kind, with severe hemorrhage, the memory of the experience is apt to linger for a long time.

As this paper has to do with the management of placenta praevia, needless definitions and detailed recitation of predisposing factors and minute pathology may be eliminated. Brevity can be assured and the requirements of the topic entirely met by considering the subject from the clinical aspect alone. For our purpose we can assume that in placenta praevia we have an abnormal location of the placenta, either of lateral, marginal, or central implantation, the partial detachment of which gives rise to bleeding, generally painless, usually occurring in the last three months of pregnancy.

This bleeding may vary in severity from a slight flow to a fatal flooding. While it is said most cases occur during the last three months, Shears reports a case with fatal termination occurring at the fifth month; and there is ample reason to believe many cases of early abortion, associated with severe hemorrhage, may be attributed to this cause. A review of the available literature on the various methods of treatment carried out by recognized authorities shows very little difference in the results obtained. The maternal mortality under conservative treatment averages about 8%; and the foetal mortality, something in excess of 50%. By some this is stated to be as high as 70% while others give a more conservative estimate.

Efforts to reduce foetal mortality by more radical procedures, while apparently attain-

ing the result desired, have almost invariably brought about a larger maternal death rate.

All forms of recognized treatment have their proponents and opponents. Norton, of Philadelphia, while an advocate of Cesarean section in selected cases, believes simple tamponade to be the conservative method of choice, and quotes a series of cases successfully treated by this method. Kosmak advocates the use of bags, placed extra-ovularly and shows reasonable success. Yet in the bag method Williams, DeLee, Cornell and others favor placing the bags intra-ovularly.

If the cervix is dilated or easily dilatable, most agree that simple rupture of the membranes is all that is necessary. Bipolar version, after the manner of Braxton-Hicks, gives a low maternal mortality and the highest foetal death rate; yet it is the method of choice in the Schauta clinic in Vienna. Accouchement force, favored by a few, is condemned by the majority. Finally Cesarean section in selected cases finds champions in such authorities as Davis, LeLee, Cornell, Veit and Bar, only to be condemned by Williams, in this country, and Naegel, Byrnes and Cameron abroad. The need of careful investigation in every case showing bleeding during pregnancy cannot be too strongly emphasized. Action is imperative, yet nowhere in the whole field of obstetrics do we find a better place to apply the axiom that "the successful obstetrician is one who can maintain an attitude of masterly inactivity." An examination must be made to establish a definite diagnosis, but with a full appreciation of the danger involved. For it must not be forgotten a single vaginal examination in this condition has been followed by a fatal hemorrhage.

Once a diagnosis is made each step should be actuated by a definite reason. Nothing should be done that is not a necessary part of the treatment. Every effort should be put

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forth to minimize hemorrhage; a small amount of blood lost may determine the difference between success and failure. Various factors will influence the treatment to be instituted; the skill and training of the attendant, the period of gestation, whether before or after viability; the physical condition of mother and babe, the environment in which the procedure selected shall be carried out, must all be considered, and it must not be forgotten that the wishes of the parents, aside from any other reason, will at times influence the action to be taken.

But what shall be done in a given case? At or near term with the child alive and the cervix dilated or easily dilatable it will be merely a question of which method to employ. Rupture of the membranes may be all that is necessary, permitting descent and engagement of the presenting part, the delivery being accomplished as for the same presentation without complication.

Tamponade may be resorted to either as a temporary expedient or to facilitate dilatation, following rupture of membranes, the natural forces being aided by quinine, ergot, small doses of pituitrin or the application of forceps if it seems advisable. Since dilatation by rubber bags offers a lower foetal death rate than the Braxton-Hicks version, with practically no difference in the maternal mortality, the selection of this method would seem to be proper when a choice of the two is considered. When placed intra-ovularly there is greater probability of controlling hemorrhage and certainly dilatation will be accomplished just as well. Once the cervix is completely dilated, if hemorrhage seems reasonably controlled, the labor may be left to proceed, such other aids being utilized as seem necessary or desirable.

When bags are used an effort must be made to puncture the membranes lateral to the placenta. Once filled moderate traction may be made to press the bag firmly against the placental site. Care must be exercised as the softened cervix will tear easily. This of itself may give rise to fatal hemorrhage or at least the amount of blood lost from this source may be the deciding factor against the patient.

If this method is employed the physician must be in constant attendance until delivery is accomplished, otherwise the bag may slip out of the cervix into the vagina and permit severe concealed hemorrhage to occur. If it

is evident the baby is dead when the patient is seen, bipolar version may be the method of choice for obvious reasons.

A firm and resistant cervix may require other treatment. Dilatation by branched dilators is now an obsolete procedure, while vaginal hysterotomy is no longer employed. It is here as well as in certain cases of central implantation of the placenta that classical Cesarean section has been advocated. If the patient is seen before viability of the child, one of two courses may be followed.

Either it may be assumed the baby is doomed and steps taken to empty the uterus immediately, or an attempt may be made to carry the case to term. If the latter is the course selected, it must be followed with a full appreciation of the responsibility involved; and with the assurance that there are means at hand to meet all emergencies that may arise. The patient should be in a well equipped hospital or near one if possible. She should be kept in bed during the greater part of the time and closely watched. Short rest periods out of bed might be permitted at intervals. The blood lost, if large in amount, to be made up by occasional transfusion. Suitable donors previously selected to be within easy reach. If it is found the procedure proves too dangerous to the mother, through repeated severe hemorrhages with no hopes of delivering a living child, this plan may be abandoned at any time. If successfully carried to term and it is evident the baby is strong and able to stand the traumatism incident to passage through the birth canal, any of the conservative measures discussed may be instituted. If at this time the infant shows signs of weakness, slight foetal movements or rapid heart sounds, or if there is a central implantation of placenta, Cesarean section may be justifiable, as well as in those cases seen shortly after the period of viability has been reached, when it is evident the chances of delivering a living child through the natural channels are very slight.

My experience in private practice with placenta praevia has been limited to a few cases, two cases in which I was called in at labor and one in which I was only suspicious from slight hemorrhage before labor.

Case 1.—Mrs. S., primipara a large heavy full blood person giving a history of slight bleeding at periods for several months. Examination showed cervix fairly well dilated and considerable hemorrhage going on but not alarming in amount. The case being at full term I called in another physician

and as the placenta was planted directly over the cervical opening I resorted to the internal version method and delivered a dead baby in a reasonably quick time, there being no excessive hemorrhage and the mother making an uninterrupted recovery. One peculiar thing occurred in this delivery as when I came to examine the placenta it was found that the hand in passing through the placenta pushed the cord therefrom so it hung by a shred of membrane only. Anesthetic used.

Case 2.—Mrs. N., multipara being the mother of several children. First seen after several hours of labor under the care of another physician. Hemorrhage had been so free she was very weak and everything pointed to the death of the baby. I found a lateral implantation of placenta with wide dilation of cervix, was able to apply forceps without trouble and delivered a dead baby. Mother made an uninterrupted recovery. No anesthetic.

Case 3.—Mrs. H., multipara was many hours in labor with placenta completely covering os. Two physicians in charge of case. Fairly strong heart action notwithstanding considerable loss of blood, the baby gave promise of being alive so internal version was resorted to passing hand directly through the placenta, and delivering a strong vigorous baby. Mother made an uninterrupted recovery.

The methods in use in large populous centers and very sparsely settled communities must of necessity vary, nor can long drawn out periods be followed, as hospitals are few and far between and most physicians, like myself, must often work alone and with unskilled assistants and little or no good lights,

often with little or no heat in winter, so you can realize the almost insurmountable obstacles to be met. Again the surgeon is not as a rule a good obstetrician and after examining per vaginam the risks of Cesarean section is very much increased.

In conclusion I am frank to say I do not believe my limited experience gives me the right to formulate rules for the care of placenta praevia—far from it but the experience of others teach things, among the following are outstanding:

1. "A woman's chances of recovery from placenta praevia rest chiefly with the man who sees her first."

2. To be constantly alert when hemorrhage of the painless variety occurs at any time during pregnancy.

3. Utilize such methods as seem applicable and indicated in a given case rather than attempt to make the case applicable to the treatment.

4. Finally keeping in mind that under all forms of treatment there is a foetal mortality in excess of 50%, justifying, under certain circumstances, a more radical procedure which can be expected to materially reduce foetal mortality with no appreciable increase in the maternal death rate.

THE VALUE OF THE CARDIOGRAPH IN ARRHYTHMIAS.*

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The rapid, recent advancement of knowledge of the heart mechanism has only been possible through employment of mechanical instruments of precision. Since many subjective methods are commonly believed to be effective only in the hands of the chosen few who consider themselves possessed of a skill not given to many in a generation and who have a manipulative dexterity seldom duplicated, we, of lesser ability, must learn to depend upon instruments which bring to our optical sense an exactness which leaves little room for speculation. Objective methods, graphic especially, have changed many of the long held conceptions of clinicians who depended upon personal skill alone and scoffed at the necessity of instruments which give exact measurements of the heart action.

The method which depends for its success

upon a supposedly unusual sensitiveness to touch or hearing is a method whose clinical scope is admittedly limited and can be used by few of the medical profession.

The method of graphically examining the heart mechanism which I wish to present to you is one any practitioner can use and, with a little effort, can interpret intelligently and accurately. It places the disordered mechanism of the heart upon a rational basis, it renders the prognosis more exact, it abolishes the promiscuous administration of cardiac poisons and clearly shows the effect of therapeutic efforts.

The records constitute the most exact signs which we possess of affections of the cardiac mechanism. Imprinted by the disease itself, they form a permanent and accurate testimony of past cardiac derangements.

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

ANATOMY AND MECHANISM OF THE CONDUCTING APPARATUS

The complete beat of the normal heart consists of a contraction of the auricle and then the ventricle in orderly sequence. The wave of contraction has been shown to start in a small mass of tissue, the sino-auricular node (called the "pacemaker") which lies at the junction of the superior vena cava and the right auricle. The contraction normally spreads through the walls of both auricles. This is the auricular systole. Each auricular systole transmits a stimulus through a band of neuromuscular tissue called the auriculo-ventricular bundle of His to the ventricles which results in the ventricular systole. The bundle of His starts in the right auricle near the coronary sinus and proceeds forward and downward to the membranous septum of the ventricle where it divides and sends a branch to each ventricle. The subdivisions of these branches are connected with the ventricular musculature through the complex cells of Purkinje.

In the normally acting adult heart the "pacemaker" sends forth waves of contraction at a rate which averages 72 per minute and the systoles follow each other in a regular rhythm. The "pacemaker" is under the control of the vagi or inhibitory nerves of the heart, and these normally restrain this stimulus-producing center. Destruction of these nerves or paralyzing the nerve endings in the heart with atropin raises the rate of the heart beat by removing the "brake" of the "pacemaker."

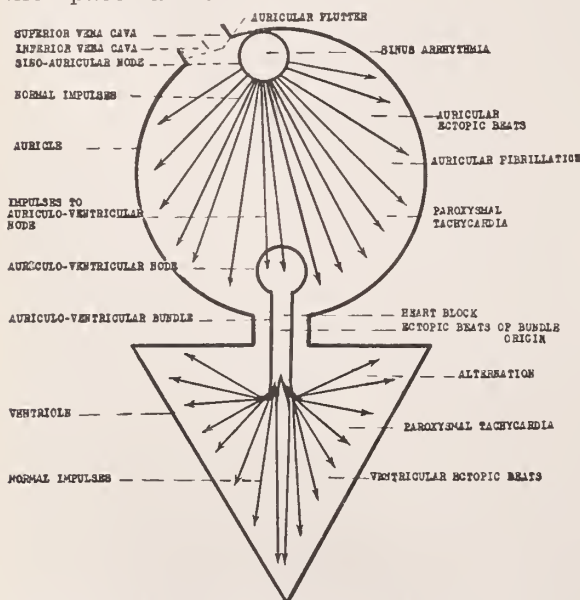


Figure I. Diagrammatic scheme showing the mechanism of the cardiac impulse and the areas in which cardiac irregularities originate.

TIME OF CONDUCTION AND DURATION OF SYSTOLES AND DIASTOLES

The normal time of conduction from the beginning of the auricular systole to that of the ventricular systole (As - Vs) is from 0.1 to 0.2 of a second. This is approximately the a-c interval shown in the venous cardiogram. Assuming a heart rate of 70 per minute, the average duration of the different phases may be estimated as follows:

Ventricular systole.....	38 seconds
Ventricular diastole.....	48 seconds
Auricular systole.....	1 to .17 seconds
Auricular diastole.....	69 to .76 seconds

TYPES OF ARRHYTHMIAS

Cardiac arrhythmias are usually divided into the following principal types:

1. Sinus arrhythmia.
2. Heart block.
3. Ectopic systoles.
4. Paroxysmal tachycardia.
5. Auricular flutter.
6. Auricular fibrillation.
7. Alternation of the heart.

SINUS IRREGULARITIES

Irregularities of the heart which are caused by an interference with the rhythmic impulses at the point of their origin are called sinus arrhythmias and are divided into two main groups.

I. Respiratory arrhythmia.

In respiratory arrhythmia the heart slows during expiration and is increased during inspiration. This is a common condition in children and has no pathological significance.

II. Non-respiratory sinus arrhythmia.

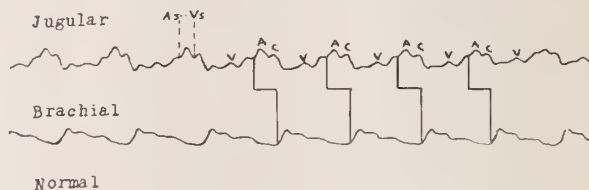


Figure II. Normal heart tracings. As - Vs conduction time from auricle to ventricle. A. Auricular impulse. C. Carotid impulse. V. End of ventricular systole.

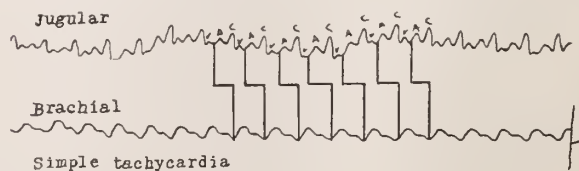


Figure III. Simple tachycardia. Rate 120 per minute. Otherwise normal.

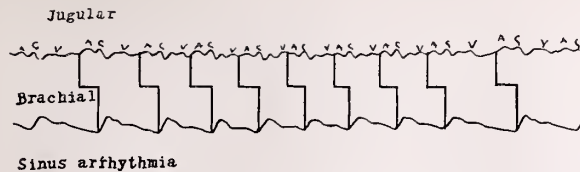


Figure IV. Sinus arrhythmia. Cardiac cycle varying from .6 of a second to 1 second.

These have no relation to the respiratory movement and are divided as follows:

1. Sudden and prolonged cessation of the whole heart beat which is usually associated with syncope.
2. Relatively abrupt and profound slowing of the whole heart.
3. Phasic variation of the heart rate in which a retardation and then acceleration of the whole heart occurs.
4. An irregularity of the whole heart in which shorter and longer pauses are intermingled indiscriminately.

HEART BLOCK

While there may be a heart block which originates in the sino-auricular node and both the auricle and ventricle miss one or more beats, only that type is considered in which the auriculo-ventricular bundle is involved.

1. Prolongation of the "As - Vs" interval. In some conditions the time of conduction of the impulse from the auricle to the ventricle is delayed so that the ventricular systole follows the auricular systole at an interval greater than the normal 0.1 to 0.2 seconds. Since the pulse shows no abnormality the

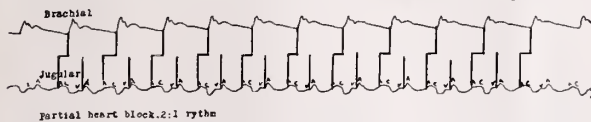


Figure V. Partial heart block 2:1 rhythm. The auricle is beating at the rate of 78 and the ventricle at 39 per minute.

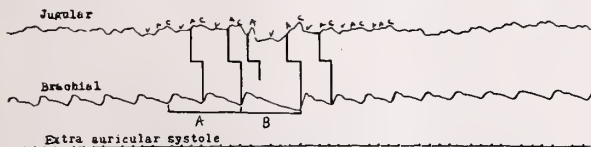


Figure VI. Extra auricular systole. The extra systole arises in the auricular tissue consequently A is greater than B.

identification of this grade of heart block is only possible by graphic means.

2. Dropped beats. When the grade of block is higher the ventricle fails to respond to occasional auricular impulses. This produces a pause which breaks the natural rhythm of the ventricle. This form is usually associated with a progressive increase of the

preceding As - Vs intervals and decrease of them after the pause.

Frequent failure to respond. In this condition a simple ratio of ventricular response is established. The commonest of these ratios is the 2:1 block in which the auricle beats twice as fast as the ventricle. Rarely there may be a 3:1 or 4:1 ratio. More often 1:1 and 2:1 ratios coexist.

3. Complete heart block. When this grade of heart block exists no impulses are transmitted to the ventricle. The contractions of the auricle and ventricle are entirely independent of each other and two separate and regular rhythms are established in the heart.

ECTOPIC CONTRACTIONS

These are contractions of the heart which disturb the rhythmic sequence by appearing early and are in response to impulses which originate in the musculature of the auricle, ventricle or in the tissue uniting these two structures. This extra impulse requires little time for preparation and is not of a rhythmic series as a rule. This type of irregularity is classified as:

1. Premature ventricular contractions.

If an impulse arises in the ventricle causing it to contract before the normal auricular

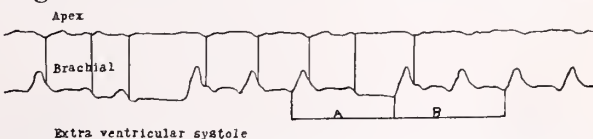


Figure VII. Extra ventricular systole. The auricle is contracting regularly. The extra systole arises in the ventricle, therefore, A is equal to B.

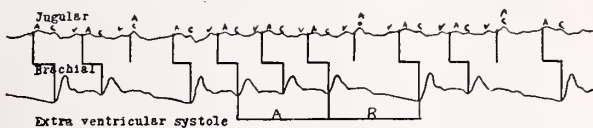


Figure VIII. Extra systole arising in the bundle of His. The ventricle and auricle contract simultaneously.

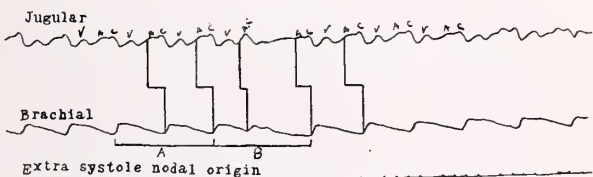


Figure IX. Same case as figure VII. Shows the relation of the end of the apex impulse to the end of the contraction wave in the brachial.

impulse arrives, it is called a premature contraction of ventricular origin. With the exception of the mechanism just described the ventricle is dependent for its stimuli upon the auricular impulse. While the ventricle is con-

tracting from the ventricular stimulus it is in a refractory state and is not affected by the impulse from the auricle. After the disturbance produced by the single premature beat, the ventricle rests until the next auricular impulse reaches it, consequently there is a diastole greater than the normal period. The period of disturbance is exactly equal to two complete cycles of the normal rhythm.

2. Premature auricular contractions. When a premature impulse originates in the auricle, this organ contracts and the ventricle if not in the refractory period follows it. There is a disturbance of the rhythm in which both the auricle and ventricle beat prematurely. The premature contraction is followed by a long pause but the whole period of disturbance is not equivalent, as in the premature ventricular beat, to two full cycles of the normal rhythm.

3. Premature contractions of auriculo-ventricular origin. In some cases an ectopic impulse originates in the auriculo-ventricular bundle and this results in the simultaneous contraction of the auricle and ventricle. In this condition either the auricle or ventricle or both contract prematurely.

The exact diagnosis of these abnormalities is not possible without the assistance of graphic methods.

PAROXYSMAL TACHYCARDIA

This is a condition in which from time to time the normal mechanism is interrupted by a series of rapid and regular beats, varying in rate from 100 to 220 per minute, the series starting and ending abruptly. These paroxysms are due to new and ectopic impulses, which dominate the movement of the whole heart. This is considered to be a regular series of extra systoles and is not controlled by the vagal or sympathetic nerves. When

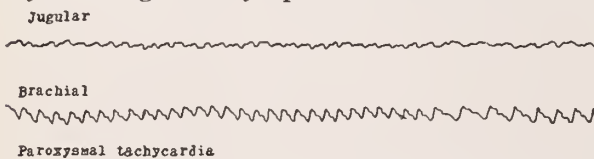


Figure X. Paroxysmal tachycardia. Shows the rapid regular contractions which end abruptly.

the new impulses arise in the auricle, which they usually do, the normal sequence of contraction is maintained, but when they arise in the ventricle the contraction of the auricle follows that of the ventricle. Change of posture has no effect upon the rate as it does in simple tachycardia in which the rate is reduced

by placing the patient in the recumbent position.

AURICULAR FLUTTER

Auricular flutter is a condition in which the contraction follows a circular and never ending path in the auricle. These circuits are completed at a rate of from 240 to 350 per minute.

When the heart beats normally each beat starts in the sino-auricular node and the contraction radiates in all directions through the

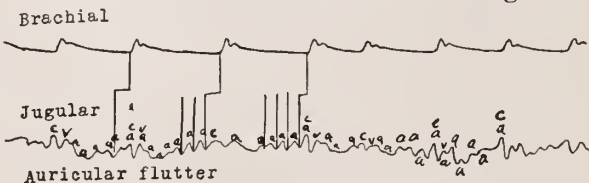


Figure XI. Auricular flutter. Rate of ventricle 54. Rate of auricle 360.

auricular muscle. When it reaches the most distant muscle it dies out, the auricle then remains quiescent until the next impulse is discharged.

In flutter of the auricle a single and continuous wave circulates in the auricle usually around the combined mouth of the superior and inferior venae cavae. It pursues its own course in one direction, passing over the same circuit again and again. As the wave is always circulating, the auricle as a whole has no diastole, but there is a continuous weak action of the muscle. At each circuit the auricle sends an impulse toward the ventricle, but many of these stimuli cannot pass through the bundle of His. Since there is often a 2:1 heart block present, the rate of the ventricle is usually half that of the auricle. The ventricle may respond regularly or irregularly, depending upon the degree of heart block. The beat of the auricle is regular and varies little in rate. It may last from a few hours to years. A cardiogram reveals the exact condition present.

AURICULAR FIBRILLATION

In this condition the general contraction of the auricle is replaced by fibrillary twitch-

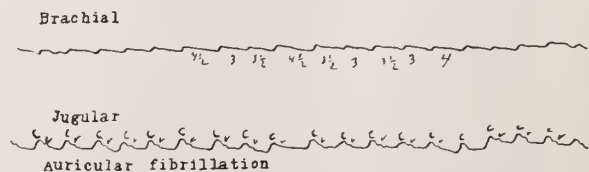


Figure XII. Auricular fibrillation shows the ventricle beating at an absolutely irregular rhythm. No contraction of the auricle is shown in the jugular curve.

ings. Rapid and irregular impulses arising in the auricle are transmitted to the ventricle giving it a gross irregularity. The auricle is never in a state of diastole but there is a constant contracting of some of the muscle fibers. The ventricular rates vary from 40 to 200, but usually are between 90 and 140.

This condition is accurately shown in a carefully taken cardiogram.

ALTERNATION OF THE HEART

In alternation the ventricle while beating regularly expels larger and smaller quantities of blood at alternate contractions. The auricle contracts regularly and is followed in normal time by the ventricle.

The disturbance is dependent entirely upon the ventricle sending larger and smaller amounts of blood into the arteries at alternate contractions. It is supposed that a different number of ventricular fibers contract at alternate systoles. It often presents itself following premature contractions and should be looked for in these cases. It is seldom recognized by other than instrumental means.

VALUE OF THE CARDIOGRAPH

1. It has greatly advanced in recent years our knowledge of the heart mechanism.
2. The instrument is easily manipulated and can be used under any conditions.
3. It is a method of making an accurate diagnosis of cardiac irregularities.
4. The action of cardiac drugs in arrhythmias can be gauged definitely by this method.
5. Permanent records are obtained and concerning previous conditions one does not have to trust to an unreliable memory.
6. A more accurate prognosis can be given when the exact abnormality present is known.
7. Finally, it makes it possible for us of ordinary ability to clearly understand and accurately interpret defects in the cardiac mechanism.

In conclusion, I wish to emphasize the fact that this method of cardiac investigation should only be a part of a complete general examination and the results obtained from its use should be weighed with all other facts gathered before a final diagnosis is made.

SODIUM IODIDE INTRAVENOUSLY*

Lucien Stark, M. D., Hartington, Nebr.

One of the mysteries of medicine has always been the use of iodine and the iodides. They have been used empirically more than all the other drugs in the materia medica combined. I well remember when an old professor of mine said in class that whenever you did not know what else to do, to give iodides, as you were bound to get a result of some kind. Since our information has been a little more clearly classified and the nature of iodine a little better understood, we have all used it with more judgment than formerly. But even now a great deal of iodine and iodides are used largely upon an empiric basis and will probably continue to be so used until the end of time or until we are all devotees of Albert Abrams. It has been used in every condition from cerebro-spinal meningitis to a common cold and from osteomyelitis to a sprained thumb.

Following the last epidemic of influenza, I had a number of patients that, after making a complete convalescence, suddenly developed a local or a multiple neuritis. This

neuritis was more apt to appear along the course of the long bones than at other locations, but did appear at other points as well. They were generally without temperature and while none of them were extremely severe they were very painful and caused a great deal of discomfort and partial disability. The first case was a neuritis of the median nerve in the right arm, the next in the posterior tibial, the next another median, next a sciatic, and so on, but in the main following the course of the nerves along the long bones. There was one case that appeared, shortly after an attack of influenza, with an apparent neuritis of the second branch of the trifacial and I am still in doubt as to whether or not we had a neuritis or an ordinary tic.

The first of these cases of neuritis was treated in accord with the text book methods but our efforts were not crowned with any notable degree of success. Practically all of our text books recommend the use of iodides in neuritis, but I was unable to relieve these people by following out the treatment. In

*Read before the Fifth Councilor District Medical Society, Blair, Neb., Oct. 17, 1923.

giving the iodides by mouth we tried the one drop a day increase and about all the other methods to get large amounts of iodides into the patient; but about all that we got was a badly upset digestive apparatus and a more or less disgusted patient.

While at the American College of Physicians meeting last year I had heard about the use of iodides intravenously and had understood that some seemingly large dosages could be given intravenously. I thought that I would try and give iodides in that way in order to get the amount into the patient. There was not a great deal of literature on the subject but what there was advised the use of sodium iodide because of the relative inactivity of the sodium ion. The first case was given a dose of 30 grains, repeated in three days. There had been no bad effect so we gave 60 grains three days later. We then gave 60 grains in three days and followed it with 120 grains in five days. After five days I gave 180 grains and got a beautiful case of iodism, so I cut back to the 120 grain doses for three doses and the patient was discharged.

The next case was a minister, age 49, with a wonderful family and personal history. He had recovered from the influenza some days before and then suddenly appeared with a neuritis in his posterior tibial. As he was the second patient upon whom we were using iodides, we began with 30 grains, repeated in three days, and then went to 60 grains for two more doses at three-day intervals. As he appeared well at this time, we gave him no more and he has remained well for the past eight months.

The other cases run about the same except as to the number of intravenous injections required and the varying dosage that they were able to assimilate. The case in the second branch of the trifacial yielded after a series of 30, 30, 60, 60, 30 grain injections all at three-day intervals.

In the entire series of fourteen cases there were none that were not benefited, and having seen all of them within the last month I know that they are having no further difficulty. There were, however, but nine of these cases that followed the influenza, the other five being from other causes, but we treated them with iodides as it seemed the best thing to do. One of the cases that did not follow the influenza was one that I had had on my hands for about seven years.

There was apparently no reason for the neuritis. Her tonsils were out, her teeth had all been x-rayed and no bad ones found, her sinuses had been looked after by a very competent nose and throat man, and there was no gall bladder, appendix, tubal or renal infection. She was but 29 years old and aside from the neuritis was in perfect condition. She had been a little more free from the painful attacks during her pregnancies than at other times, but they always came back and at times were badly aggravated. It was her custom to get up at least four or five times during the night to rest the arm in order that she might obtain any sleep at all. At five-day intervals we gave her 30, 30, 60, 60, 120, 150, 120, 120, 120, 60, 60, 30 grains of the iodide intravenously. The 150-grain dose produced a good case of iodism so we immediately returned to the margin of safety. After she had taken the first eight injections she seemed to be well, but as she had had so much trouble and it seemed too good to be true, we gave her four more. The other "non-flu" cases went approximately the same way and I am pleased to say that they all are well up to date.

There are a good many incidents that occurred during the treatment that are worthy of note. While a large dosage is to be used, I came to the conclusion that the margin of safety was not to exceed one grain of iodide per pound of body weight. I know that there are larger doses being used, but in my experience it is about the safest plan. In administering your iodides it is not well to make your concentration too great as the salt is quite irritating if in too great concentration. Where the dose to be given was 60 grains or less, we gave it in twenty cc. of distilled water in a syringe. Where the dose was more than 60 grains we gave it in from forty to eighty cc. of water by gravity. It is safe to say that you will have less irritation from the salt if your solution is no greater than 60 grains for each twenty cc. of water. Of course, the water used must be freshly distilled or you will have the same dyspnoea that you will always get when you use old distilled water for intravenous work. In getting into the vein, be sure that you get in, as when injected outside the vein into the tissues you get a fearful amount of pain from the burning that your solution produces. If you happen to go all the way through the vein and are going to try it again, go up a little higher in the vein as

the least bit of leakage into the perivenous tissue causes a great deal of pain and discomfort.

The patient will also notice a few things that are out of the ordinary. The case that was not due to influenza had had a rather muddy complexion for some years and after her neuritis was relieved she cleared up amazingly. Just why I do not know. One of the cases not due to influenza was a woman of 48 who had had rather a bad case of cystitis for some time. She had a cystocele that was not large but her bladder symptoms were very annoying. After she had had three of these injections, she asked me if they would have any effect on the bladder condition and I told her that so far as I knew they would not. She then told me that she had noticed that within an hour or two after she had had an injection, she had a sensation of warmth in her bladder and that she felt better than she had in a long while. Her neuritis cleared up nicely and when I saw her about six months after the last injection, the neuritis was a thing of the past and she said that her bladder had annoyed her but once since the last time that I saw her.

One of the cases following influenza was an old patient of mine with an interstitial nephritis and a systolic pressure of 220 and a diastolic of 170. Her neuritis cleared up nicely and since that time her pressure has not been above 180 at any time that I have seen her. Another influenza case was a young woman of 19 with rather a thick neck but with no symptoms of hyperthyroidism. Upon her recovery from the neuritis there

seemed to be considerable improvement in the size of the neck. I would not have thought so much about it but she called my attention to it herself.

Just now we hear a great deal about this form of therapy and the usual number of commercial houses are bombarding us with literature to use their product and then tell us how it is done. To my mind there is but one correct way and that is to make your own solutions. Probably you all have a still of some kind and it will distill water as well as anything else, so use it for that purpose and distill the water that you use the day that you use it. You can all weigh out a drug as well as the average man, so why not get some Squibbs' sodium iodide and make your own. I think that you will find it a great deal more satisfactory and considerably less expensive. Of course, your technique must be good, but that can be easily acquired and you must be clean.

To sum up we can only say that our experience with sodium iodide intravenously has been very satisfactory, as we have been able to get a larger amount of iodide into the patient with less gastric or other disturbance than by any other method. It has given us better control over the patient and has, I think, helped us to keep them away from the back rubbers, spine adjusters and others of that ilk so that we could really be of some benefit to them. As to the physiological or chemical reasons for the action of the iodides in these cases, I am going to volunteer no explanation, as I do not know; but I do know that they happened and that I have taken great pleasure therein.

INSULIN*

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Asst. Surgeon National Military Home for Disabled Volunteer Soldiers

The production of a pancreatic extract containing the antidiabetic hormone, suitable for the treatment of patients with diabetes, is one of the greatest medical achievements of the time, and marks the culmination of a series of investigations instituted by the important discovery of Von Mering and Minkowski in 1889. It is interesting that years before the time of Minkowski, numerous clinicians had commented on the occasional association of diabetes and pancreatic disease,

and yet no one had successfully determined the activities of the pancreas in sugar metabolism.

Science advances thus haltingly. The distinguished anatomist, Conrad Brunner, in 1682 to 1683, was the first to attempt the extirpation of the pancreas in animals. The great Claude Bernard was engaged in this problem and attempted ablation of the pancreas by various means without obtaining any clue to its role in diabetes. Von Mering and Minkowski, in their original paper, refer

*Read before the Eighth Councilor District and Holt County Medical Societies meeting, Ainsworth, Nebr., Oct. 24, 1923.

to the experiments of the celebrated American surgeon, Nicholas Senn, who in 1866, attempted total extirpation of the pancreas. The dogs and cats who were thus operated on died in from two hours to nine days, partly from the effects of the operation, partly from gangrene of the bowel, and peritonitis. One dog, who lived nine days, retained a good appetite and consumed ample food to the last, and yet lost five pounds in weight. Probably this dog had diabetes, but, unfortunately, there is no record that the urine was examined for sugar. It was the work of Von Mering and Minkowski which proved that the pancreas functions in sugar metabolism. The complete removal of this organ from dogs, cats, swine and frogs resulted in severe diabetes, while partial removal, as was shown a little later by Minkowski, resulted in a more chronic and milder form of the disease.

Lepine first advanced the theory that the pancreas functions as a gland of internal secretion. Later, this view was strengthened by the studies of anatomists, and a better appreciation of the significance of the islands of Langerhans, and of the intimate relation of these to the blood vessels around them. The island cells have a common origin with the acinous tissue from the duct epithelium, but early become separated and differentiated from the acinous cells and thereafter retain their individuality. They are richly supplied with blood by special capillary nets that have been compared aptly to the glomeruli of the kidneys. Furthermore, collateral advances made in the study of the other glands of internal secretion, especially the thyroid and the adrenal and the successful preparation of extracts of these, supported the theory and kept alive the hope that it would be possible to prepare an equally active extract of the pancreas. However, failure long attended direct attack on the problem. Numerous trials of pancreatic feedings were attempted without success.

The results from grafted pancreatic tissue were encouraging inasmuch as they showed that animals would live long after pancreatectomy if bits of pancreas were grafted under the skin, but such procedures offered nothing as a method of treating diabetes in man, because grafts that were made from animal species into another invariably atrophied. This subject was investigated very thoroughly by Minkowski. Further good evidence of the existence of a pancreatic internal

secretion was obtained by the work of Clarke, a brilliant young scientist whose promising career was arrested by the influenza epidemic of 1918. Clarke removed the heart and pancreas of animals and perfused these organs with Locke's solution, containing glucose, finding that sugar disappeared into the heart more rapidly when the circuit included the pancreas, than when the heart alone was perfused. Something was added to the Locke solution, or the sugar was changed in its passage through the pancreas. In the course of this study, Clark made another discovery which is probably of fundamental importance, that the sugar suffers an alteration of its specific rotation on passing through the pancreas. Normally, glucose rotates the plane of polarized light well to the right; its specific rotation is plus 52 degrees, but the solutions that have been through the pancreas, although they contained the same amount of sugar, as was proved by their ability to reduce alkaline copper solutions, no longer rotated normally. Here was the evidence, therefore, that the pancreas acted directly upon glucose.

Numerous attempts have been made to prepare extracts of the pancreas. Those of Murlin and Kramer, Kleiner, and Scott should be mentioned in particular, because there is good reason to believe that each of these investigators obtained active extracts; yet it must be added that none of them were sufficiently encouraged by their initial results to undertake the preparation of extracts suitable for use on patients.

It is to the Canadian investigators, Banting and Best and their collaborators in the University of Toronto, that the credit must be given for the development of insulin. The pioneering was conceived and executed by Banting and Best in the physiologic laboratories of Professor MacLeod. The first patient received an extract made from the pancreas of fetal calves, on January 10th, 1922. Later developments permitted the preparation of active extracts from the adult animals from the slaughter house. Recognizing the importance of the early results, Professors MacLeod, Collip, Graham, Campbell and Fletcher and others in the Departments of Physiology and Medicine, University of Toronto, became engaged in the investigation, and as a result of the splendid cooperation of this able group of investigators and clinicians, progress was rapid.

Protein-free extracts were prepared in quantity, a large group of patients was treated, and the therapeutic value of insulin was definitely established. There remained, then, the problem of how to best introduce insulin to the medical world, which has been later solved satisfactorily.

Insulin, also known as iletin, is an aqueous solution of the active principle obtained from the Islets of Langerhans in the pancreas. It is made by Lilly, Indianapolis, under license from the University of Toronto, which controls the product. This extract when injected subcutaneously into a human diabetic, enables the patient to utilize the carbohydrates in a normal manner. The original physiological unit of the Toronto committee was the amount required to lower the blood sugar of a 2-kilogram rabbit to 0.045%, at which point convulsions generally occur.

Since this unit was too large for clinical purposes, a clinical unit has been adopted which is one-third this amount. The unit indicated on the package in which it is sold may, therefore, be defined as one-third the amount of insulin required to lower the blood sugar to 0.045% and induce convulsions in 60 to 70% of 2-kilogram rabbits which have been starved for a period of twenty-four hours preceding the test.

The unit when injected into the human diabetic will enable the patient to utilize or store from 1 to 4 grams additional carbohydrates depending on the severity of the case. The number of units contained in each cubic centimeter is clearly stated on the manufacturer's label. The method of standardization now used, supplemented by clinical tests, is quite reliable but does not prevent a variation of 5 to 10 per cent in the finished product. For this reason patients should be kept under competent observation, especially when changing from one lot number of insulin to another.

Insulin when given too long before a meal or when given in too large a dose, will cause a lowering of the blood sugar below the normal level—causing a hypoglycemia. This is to be avoided as too great a lowering will cause acute symptoms such as weakness, nervousness and sweating followed by complete collapse and unconsciousness, which may end fatally. Delirium or convulsions may sometimes occur. The premonitory symptoms are quickly overcome by feeding the patient some form of available carbohydrates,

preferably orange juice, glucose or cane sugar. Even when comatose, if glucose or sugar can be administered by mouth or stomach tube, recovery is remarkably rapid. If it is impossible to give carbohydrates in this manner, or the patient is in a critical condition, from 5 to 20 grams of dextrose may be injected intravenously, using a five to fifty per cent sterile solution. This restores the blood sugar and the patient recovers and returns to normal, usually within 10 to 30 minutes. Subcutaneous injection of five to ten minims of a one to one thousand solutions of adrenalin hydrochloride may obviate the necessity of intravenous glucose, (dextrose) injections. If adrenalin thus given partially restores the patient, carbohydrates must then be given by mouth.

This remarkable lowering of blood sugar by insulin makes necessary extreme caution in its administration. Generally speaking it is best to give 15 to 30 minutes before a meal, either once, twice or thrice daily, according to the severity of the case. The blood sugar removed from the blood stream and utilized through the influence of insulin is thus in part replaced by the carbohydrates absorbed following the meal, or to state it in another way, the high blood sugar which usually follows the ingestion of food is prevented and in the diabetic the usual excretion of sugar in the urine does not occur because the carbohydrates are being rapidly stored or used in the body.

In those cases receiving insulin without adequate laboratory control of blood sugar, it may be safer to have a blood sugar somewhat above normal with a transient glycosuria than to have the urine continuously sugar free with a blood sugar at or below normal.

However, in these cases, if the patient be properly informed of the early symptoms of low blood sugar, (weakness, nervousness and sweating) and instructed to always have in their possession some form of sugar for immediate consumption, the danger from insulin would be minimized. Oranges, corn or glucose syrup, sugar or candy afford a readily available form of sugar capable of acting rapidly as an antidote for an overdose of insulin.

Insulin is only an adjunct to the dietary treatment of diabetes and as with the diet, so with insulin, the success attained will depend largely on the intelligence and cooperation of the patient.

The dose should be stated in units and the

number of units in each cubic centimeter should be carefully noted on the label of each vial before it is injected in the syringe preparatory for use.

METHOD OF USE

Cleanse the top of rubber cap with alcohol,

have needle and syringe sterile, draw air into syringe equal to dose to be given, insert needle through the rubber cap, invert ampoule and force the air into the ampoule and then withdraw the required dose. Rub the skin at site of injection with alcohol and inject subcutaneously, not intramuscularly.

VINCENT'S ANGINA*

J. B. McPherson, M.D. Hastings, Nebr.

In my opinion Vincent's Angina is much more common than it is generally supposed to be and undoubtedly the reason why it is not more frequently recognized is due to not taking a smear.

The fusiform bacilli and spirilla of Vincent's Angina do not grow on ordinary culture media; hence, Vincent's Angina cannot be diagnosed unless a smear is made. Some bacteriologists claim that the fusiform bacilli and the spirilla are but forms of the same organism. The fusiform bacillus and the spirochete are anaerobic, but nearly always occur associated with the aerobic bacteria, as Klebs-Loeffler bacillus, streptococcus, pneumococcus, staphylococcus, and others, and it is sometimes found in healthy mouths, but usually there is found some diseased teeth, tonsils, or gums. This condition is often mistaken for syphilis or diphtheria.

W. H. Mackinstry (Practitioner, Dec. 1917), considers that Vincent's Angina has its origin in the ulceration of the gums, ill health, and oral sepsis, together with cold, dampness, and unsanitary surroundings predispose to the disease of the patients seen by him. Thirty per cent had carious teeth and many more showed lack of oral cleanliness. Sometimes the ulceration only affects the papilla between the teeth. Trench gums as seen so frequently among soldiers of the World War is probably this affection. I am not going into detail as to the complications which may arise further than to state that some writers have reported quite a number of bronchial infections, endocarditis, pericarditis, diphtheria or syphilis.

SYMPTOMS. Usually there is but slight constitutional disturbances, temperature not very much elevated—usually from 99° to 100°. Patient may complain of feeling chilly and have some pain on swallowing, submax-

illary glands are frequently enlarged and tender to touch. These mild cases usually recover in from one week to ten days under proper treatment. Some of these cases are much more severe, however, and accompanied by more extensive lesions often involving tonsils, the pharynx, uvula, gums, particularly the molar teeth and soft palate, pain quite severe, extreme prostration, foul fetid breath. Temperature in this severe class of cases is usually somewhat higher than in the milder cases, reaching as high as 104° or 105° in some cases.

ETIOLOGY. Usually the winter months with lowered bodily resistance, diseased tonsils, teeth and gums are the predisposing factors. The exciting cause is the fusiform bacillus and spirillum of Vincent. Vincent's Angina is regarded by some writers as being mildly contagious.

PATHOLOGY. There is the formation of a false white or greyish white membrane caused by the necrosis of the superficial layers of the epithelium. Upon removal of this membrane, an ulcerated spot is seen which bleeds quite easily. Vincent's Angina is often accompanied by stomatitis and may be associated with diphtheria or syphilis. This condition is of considerable importance to the general practitioners of today as they are the first consulted and undoubtedly see many more cases than does the specialist in throat diseases.

DIAGNOSIS. Every general practitioner who uses a microscope is just as able to diagnose this condition correctly in a few minutes, as is the specialist in throat diseases, by simply making a smear and staining with a dilute solution of carbol fuchsin. If you please, always bear in mind that you might be dealing with a combined case of diphtheria and a Vincent's Angina or a syphilitic affection with Vincent's Angina. I believe one should always make a culture at time

*Read before the Republican Valley and Tenth Councilor District Medical Society, Holdrege, Oct. 25, 1923.

of taking the first smear if it is possible to obtain culture media. Of course, I realize that for the general practitioner in the smaller towns it is next to impossible to always have fresh culture tubes on hand or the means of keeping the culture at the right temperature.

TREATMENT. Captain (Indian Journal of Medicine, 1919) reports two hundred cases of Vincent's Angina treated by intramuscular injections of a six cc. colloidal arsenic and states that it never failed to sterilize the lesions in from twenty-four to forty-eight hours, and that cure was complete in four or five days. A second injection was only given exceptionally. Calomel in repeated small doses seems to be of benefit in some cases, but Vincent states that mercurial treatment aggravates the condition when the patient is not a syphilitic. Vincent himself finds that painting with a six per cent solution of iodine after removing the membrane gives very good results. I have treated a number of cases by first removing all membrane possible and with cotton-wound applicators drying the surface of the ulcerated area and applying a one per cent solution of cyanide of mercury daily to diseased parts such as tonsils, gums, etc. Some care must be used not to allow very much of this solution to trickle down the throat. I have also used salvarsan locally with what looked like marked success. It is a fact that I have tried almost everything that has been recommended in recent medical literature, and

have found that some cases will respond better to a certain treatment, such as iodine or silver nitrate, while others seem to do better with a cyanide of mercury solution or salvarsan applied locally or intravenously. There is a difference in the virulence of the bacteria in these cases of Vincent's Angina. A frequent mouth wash, such as hydrogen peroxide, phenol, or potassium chlorate, is quite important in all cases.

REPORT OF CASES.

Case 1. Age 21 years. Complained of sore throat for last four weeks, fetid breath, appetite poor, slight temperature—99.3°. Inspection of throat showed a large ulcerous spot on right tonsil. Microscopic examination showed a large number spirilla (as many as 100 in a field), also a large number of fusiform bacilli. Wassermann reaction negative. Diagnosis: Vincent's Angina.

Case 2. Age 24 years. Has been suffering from a sore throat and sores about teeth for five weeks; for the last four weeks has been under local physician's care. Feels weak all the time, has bad breath and can eat hardly anything. Temperature 99°, pulse 100, large ulcers with a greyish infiltrated base, also ulcers about molar teeth, fetid breath. Microscopic examination showed both the spirilla and the fusiform bacilli. Wassermann reaction negative. Diagnosis: Vincent's Angina.

Case 3. Age 34 years. Has been complaining for some months of having a sore nose and mouth. Denied ever having had syphilis or any private trouble. Examination showed ulcers in both nares and along teeth above and below, also at junction of hard and soft palates. Microscopic examination showed both the spirilla and the fusiform bacilli. Wassermann reaction 4 plus. Diagnosis. Syphilis with Vincent's Angina.

DIAGNOSTIC VALUE OF THE FONTANEL IN INFANCY.

C. R. Spicer, B. S., M. D., Hastings, Neb.

In infancy the almost entire lack of subjective symptoms increases the difficulty of diagnosis in some cases to a considerable degree; but the handicap is somewhat offset by the open fontanel.

To the physician whose practice is to include the care of infants a familiarity with the condition of the fontanel, normal and abnormal, is of little less importance than that of the pulse.

The habit of beginning the physical examination of infants by placing the fingers on the fontanel is well worth while and will frequently give a tip as to the nature of the trouble and in certain cases will do much to differentiate between diseases.

To be of value this test must be made while

the child is quiet, as crying, coughing or struggling will increase the tension. The size and character of the margins of the fontanel should be consistent with the age of the child and may suggest the pathology underlying the case.

Within the last few years cerebral hemorrhage in the newly-born has received much attention and its causal relation to many of the sudden deaths, untoward symptoms of the infant and paralysis and mental defects of later development heretofore unaccounted for has been established.

Of vast importance is the fact that in the very early stages of such hemorrhages the extravasated blood is in the fluid state and can, in most cases, be demonstrated by lum-

bar puncture and in certain cases, by repeated punctures, the blood has been removed, the normal pressure established and the child saved from the calamities above mentioned.

The frequency of cerebral hemorrhage was probably not appreciated until Sharpe⁽¹⁾, of New York, did lumbar puncture on a hundred consecutive babies born in the city hospital and found nine with blood in the spinal fluid. It is of the greatest significance in this connection that in five of these nine babies the fontanel was flush, two were distinctly bulging and only two were of normal tension.

About twelve per cent of all meningitis occurs in children within the first year of life. In something like half of this group the infecting organism is the meningococcus. For this germ we have a specific serum which, if used in the early stage of infection, will not only save the life of about 80% of the patients but will promptly and completely restore them to normal health.

The pathology which produces the signs and symptoms on which an early clinical diagnosis could be made in these cases is increased meningeal fluid which causes increased intracranial pressure. This condition can be appreciated early by the flush or bulging fontanel.

The vomiting, fever, convulsions and wasting common to meningitis and intestinal intoxication can usually be differentiated by the condition of the fontanel since in the one the tension is increased while in the other it is diminished.

The degree of dehydration produced by prolonged and excessive vomiting in cases of pyloric stenosis and the corresponding relief

of the same by the artificial introduction of fluids can be determined by the fontanel.

Not infrequently we have what was formerly called cerebral pneumonia—now termed meningismus. In this type of pneumonia the symptoms; head retraction, convulsions, etc., may closely resemble meningitis and considering that meningitis frequently complicates pneumonia we may, indeed, have a puzzling condition. It is very unusual, however, to have a distinctly bulging fontanel, such as would be present with head retraction, convulsions and the other symptoms in such a case, except in a true meningitis.

The intracranial pressure may be somewhat increased by active or passive congestion as in fever or an incompetent heart; but not to a degree to simulate an intracranial tumor, a hemorrhage, a meningitis or a hydrocephalus.

An extremely relaxed fontanel usually indicates a grave condition with great depression or dehydration as from hemorrhage, vomiting or diarrhea.

Though the fontanel usually closes by the eighteenth or twentieth month it is not uncommon to find it practically or completely closed at nine months and the child otherwise apparently normal. If, on the other hand, the fontanel at eighteen months will admit two or three finger tips there is almost sure to be found other evidence of lack of proper assimilation and development or intracranial pressure.

In conclusion it should be admitted that the condition of the fontanel alone should not be considered sufficient evidence on which to make a diagnosis; but it will often suggest the right line of inquiry and taken with other signs and symptoms leads to an early and correct diagnosis.

(1. Journal Am. Med. Ass'n, Aug. 1923.)

REPORT OF A CASE OF DIABETES WITH A PECULIAR COMPLICATION.

C. C. Barr, M. D., and Perry Allerton, M. D., Tilden, Nebr.

Miss E. P., age 18 yrs., single, first came under our medical attention, June 15, 1923. While trying to relieve the itching and burning of her urethra with a hairpin, she lost the hairpin in her bladder. Immediate X ray of the pelvis, showed an ordinary hairpin shadow in the region of the bladder. The procedure required less than a minute, a curved aluminum hook being inserted through the urethra and catching the bent end of the

pin which was removed without discomfort to the patient.

Urinalysis at this time was as follows: Sp. gr., 1002, neutral reaction, sugar and albumen negative, and microscopic examination normal. A 24 hr. urinary output was measured. Total urine excreted was 38 pints. An X ray of the head showed a small sella turcica of about $\frac{1}{2}$ normal size.

A tentative diagnosis was made of diabetes

insipidus, and the patient was sent to the Tilden Hospital, June 28, 1923.

Family history: Father dead, tuberculosis. Mother living—neurotic temperament. Four sisters living—all neurotic. Three brothers living—health normal.

Previous history: Usual childhood diseases. Mild attack of influenza four years ago.

Present illness: Patient states that onset of illness began about one year ago. Symptoms have gradually become more aggravating. Complains of enormous thirst, nocturia, burning, frequency and that she passes a large amount of clear urine. Has occasional gastro-intestinal disturbances with anorexia, nausea and vomiting. Is constipated at times. Becomes nervous and restless at times and does not sleep well. Has frontal and occipital headaches with giddiness at times. Also complains of weakness and peculiar body sensations such as numbness and tingling of extremities, and flushing of the face.

Menstrual history: Puberty at 14 yrs. Periods are irregular and flow is scanty, lasting only 2-3 days.

Physical examination:

Anemic female. Weight, 104 pounds. Head and neck normal except for dental caries.

Heart and lungs show no definite pathology.

Abdomen. No masses palpated. Tenderness elicited only when bladder is distended.

Extremities normal. Reflexes normal. No other pathology noted.

X-ray—Sella turcica $\frac{1}{2}$ normal size.

Urinalysis:

Date	24 hr. output	24 hr. intake
June 29	1350 cc.	1536 cc.
June 30	1200 cc.	1520 cc.
July 1	1560 cc.	1140 cc.
July 2	1340 cc.	1200 cc.
July 3	1020 cc.	1408 cc.
July 4	1300 cc.	1346 cc.
July 5	1200 cc.	1260 cc.
July 6	1100 cc.	1408 cc.
July 7	900 cc.	1230 cc.
July 8	600 cc.	1060 cc.
July 9	500 cc.	1100 cc.
July 10	700 cc.	2240 cc.
		(No pituitrin)
July 11	2150 cc.	2112 cc.
		(No pituitrin)
July 12	1300 cc.	1472 cc.
July 13	1150 cc.	1200 cc.

Sp. gr. varied from 1001 to 1006. (The lower the output the greater the concentration.) Color, very pale yellow, no sugar, no albumen, no blood cells or casts.

Treatment in the hospital:

Pituitary extract, 1 cc. daily (hypo).

Fluid extract of Ergot, 3 ss., t. i. d. p. c.

Meat free and acid free diet.

Forced restriction of fluid intake.

Mixed bromides, grs., 15 each night.

Spinal puncture did not relieve the symptoms. After 15 days hospitalization, we decided that institutional care would be a permanent procedure in the future treatment of this case. Consequently, the patient has been sent to the University Hospital at Omaha, for continuation of treatment.

CASE REPORT

C. R. Kennedy, M. D., Omaha, Nebr., Prof. Clinical Surgery, University of Nebr., College of Medicine.

The following plate and case history illustrates the danger of forcible instrumentation in the urethra.

A young man, age 30, came in on account of pain in perineum and slight urethral discharge.



Past History.—Gonorrhea about eight years ago. Three years later had difficulty in voiding, this gradually increased in severity, until he finally developed retention.

An attempt was made to catheterize him, which failed, so a metallic sound was used. He said this was passed with considerable force and was followed by severe pain for several days. He was able to void afterward but passed blood for some time.

Examination.—Urine shows glass No. 1, few shreds. Glass No. 2 and No. 3 clear. Smear negative for gonococci. Prostate and seminal vesicles normal. No difficulty on urination, no sexual disturbance.

Urethroscopic examination revealed two bands stretched across urethra in posterior portion. These

are well shown in the accompanying plate which was made from the urethroscopic view.

Treatment.—The area was cocaineized and by means of fulguration both bands were burned across. There was no pain and no hemorrhage.

A recent urethroscopic examination shows the mucous membrane smooth, with no evidence of previous trouble. Symptomatic relief is complete.

This case illustrates the necessity of urethroscopy in urethral conditions which do not clear up rapidly. I think in this type of cases, fulguration is the treatment of choice, as it is free from the danger of hemorrhage and infection and is almost painless.

HERPES ZOSTER AND INTERNAL DISEASES

It is a well known fact that herpes febrilis has been successfully transmitted to the rabbit and guinea-pig cornea, whereas the few similar experiments made in herpes zoster have only succeeded in isolated cases. In spite of this, Arnstein (Vienna General Hospital) firmly believes that most cases of zoster are of an infectious nature. This view is supported above all, by observation of epidemics and contact infections of herpes zoster and high temperature and adenitis, as also immunity on recovery from the illness. From a pathological-anatomical viewpoint, changes are usually founded in the spinal ganglia (inflammatory processes, hemorrhages, degenerative processes, tumor metastases, etc.) corresponding to the skin areas affected. The affection may also involve the incoming and outgoing nerve fibres of the posterior roots, or grey matter of the posterior cornu of the spinal cord, or even extend upwards or downwards.

It is usually the still unknown specific zoster germ, which settles in the spinal ganglia; in rare cases, however, it appears to be the bacteria of other infectious diseases, which establish themselves here and cause herpes zoster, such as the tubercle bacillus, the spirillum pallida. The primary disease furnishes disposition, and weakens the corresponding spinal ganglia to such an extent that the zoster bacillus is capable of producing lesion there. It is for this reason that, in cases of internal complaints, the localization of the herpes eruption corresponds to that of the illness, as, for instance on the thorax in lung tbc. in the region of the spleen in malaria, and in the region of the liver or kidneys when these organs are affected.

Herpes zoster is of relatively frequent occurrence in nervous diseases, diseases of the

lungs, the liver, or the kidneys; less frequently does it occur in diseases of the spleen.

Herpes zoster seldom appears, on the other hand, in diseases of the gastro-intestinal canal, or of the genitals and particularly seldom in heart diseases, all of which is of some value for the differential diagnosis of above complaints. (Wiener Arch. f. innere Med. Bd. 4, No. 2, 1922.)

HOW TO INFLUENCE WEIGHT AT BIRTH

During the past three years, H. Abels, Vienna, has noticed, in about 4000 confinements at the Trades Union Maternity Hospital that the weight of the infants born was uniformly highest from May to August, and uniformly lowest from November to March. In spite of their low weight, the infants born in the winter months showed full vitality and continued to develop satisfactorily. The cause of this can only be due to the fact that the women confined at this establishment (people without private means, members of the Sick Society) could not provide themselves, in winter, with food rich in vitamin such as fresh milk, eggs and green vegetables, which play an important part in the bone development of the foetus. These are, in particular, the foods containing the highest proportion of anti-rhachitic vitamin. It is interesting to note that a woman who took three spoonsful of codliver-oil daily, several months before her confinement, (codliver-oil being also extremely rich in anti-rhachitic vitamin), was delivered of a child weighing 4800 g.

These observations can be turned to practical account when it is advisable, on account of a narrow pelvis, that the infant should be a small one. Most important are the last three or four months of pregnancy, during which milk, butter, eggs and green vegetables should be prohibited in such cases. Beef or mutton suet and margarine should also be forbidden, though lard and all vegetable fats may be taken. Root vegetables (few carrots) should replace green vegetables. The softness of the infant's skull is a particularly advantageous result of this diet; the softness of the skull facilitates confinement under the above conditions without the risk of permanent detriment to the child.

In the case of women inclined to premature confinements, the diet prescribed should, on the other hand, tend to the early development of the foetus, in order to strengthen its viability. (Klin. Wochenschr. No. 36, 1922.)

RESEARCH IN EPILEPSY

In spite of extensive clinical and experimental study, epilepsy still remains an unsolved problem. Only within comparatively recent times has it been realized that it is a symptom-complex that may be elicited by many causes, and it not a disease *sui generis*. Even the site of the nervous discharge that is responsible for the convulsions has not been established, and the mechanism of the discharge has been variously ascribed to defective neuron construction, the action of toxins, vasomotor disturbances, and finally to purely psychogenic factors. In the April, May, and June issues of the Archives of Neurology and Psychiatry is a noteworthy series of articles reviewing previous work and reporting the results of clinical, ecologic and experimental investigations that show real progress in this baffling problem.

The resemblance between the tonic spasm of the early stage of an epileptic convulsion and the extensor rigidity of the decerebrate animal has been noted by various observers; the clonic spasms, on the other hand, have seemed to correspond with the effects of stimulating the cerebral cortex. Using injections of picrotoxin to excite convulsions, Pollock has demonstrated, in cats and dogs, that both tonic and clonic phases, indistinguishable from those in the intact animal, occur in animals that have been decerebrated by section of the brain stem below the optic thalami. Even after section below the level of the seventh nerve nuclei, similar fits are sometimes evoked, though they are less severe, and a larger dose of picrotoxin is required. These observations, if confirmed, establish that the cerebral cortex is not necessary for the evocation of a typical fit. From clinical and experimental study, Rosett propounds a highly suggestive and fundamental conception of the epileptic seizure. He points out that typical tonic spasm, and even at times clonic twitchings, can be observed in the every-day reactions of normal people to sudden and unexpected shocks, and that these reactions are influenced, in a manner identical with that shown by the seizures of epilepsy, by the administration of bromids, phenobarbital and caffeine. He also calls attention to the fact that the one constant feature of the epileptic seizures is loss of consciousness, a fact which suggests that ablation of cerebral function is essential. He concludes that the epileptic fit is a discharge

of midbrain centers when released from the control of the cerebral cortex, and is not a cortical discharge. This concept of "normal epileptoid reactions" accords well with many otherwise inexplicable facts and agrees with Pollock's finding just described. —*Jour. A. M. A.*, June 30, 1923.

A CONTRIBUTION TO THE STUDY OF PYELITIS IN PREGNANCY

According to Frederick Howard Falls, Iowa City (*Journal A. M. A.*, Nov. 10, 1923), dilatation of the ureter, and edema of the mucosa of the bladder and ureter, together with an antiperistaltic action of the ureter, probably play an important predisposing part in the causation of pyelitis of pregnancy. Bacteriolysins and agglutinins are increased in the blood of most patients who are reacting clinically to this infection, and these antibodies are transmitted to the fetus. This acquired immunity has an important bearing on the failure of these patients to develop puerperal sepsis. Cesarean section should not be practiced to avoid contamination of the uterus by infected urine, except, possibly, in cases in which it can be demonstrated that the usual antibody formation is lacking. Recurrence of the symptoms may be totally absent in succeeding pregnancies, and this may be due to the immunity developed during the primary pregnancy. The prognosis for the fetus is not favorable, owing to abortion, prematurity or underdevelopment in a considerable portion of the cases.

THE ELECTROCOAGULATION METHOD OF TREATING DISEASED TONSILS

Frank J. Novak, Jr., Chicago (*Journal A. M. A.*, June 23, 1923), employed this method in 100 cases. Without exception, the patients had a stormy experience beginning a few hours after operation. Pain was uncontrollable save by liberal doses of morphin. There was extreme difficulty in swallowing, much greater than after tonsillectomy. The plate was extremely edematous, and speech was impossible. The intensity of this reaction persisted through the sixth day. Whatever logical basis electrocoagulation of diseased tonsils may have, from a theoretical standpoint, is far overshadowed by the unsatisfactory results in actual practice. Novak believes that the method is entirely inadequate, inaccurate and unsatisfactory, and cannot in any manner compete with the accepted present-day methods of tonsillectomy.

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Happy New Year

CLOSER ORGANIZATION AND A PAID FIELD SECRETARY.

Before the House of Delegates of the 1922 meeting of the State Association, Dr. B. B. Davis, then president, suggested to the assembled body that a paid field secretary be employed by the Association. Conditions confronting the president at that time precluded following up the proposal. Dr. R. B. Adams, secretary-treasurer, in a resolution presented to the House of Delegates at the 1923 meeting, proposed an executive secretary in connection with the Committee on Public Activities which was created at that meeting.

Roger Babson says:

In one of the laboratories in Washington they have a great sunglass that measures three feet across. It's like the "burning glasses" we used to treasure when we were boys, only much larger.

This great glass gathers the rays of the sun that strike its flat surface and focuses them on a single point in a space a few feet below. That single spot is hotter than a blow torch. It will melt through a steel plate as easily as a red hot needle burns through paper.

This terrific heat—it can't be measured, for it melts all instruments—is just three feet of ordinary sunshine concentrated on a single point. Scattered, these rays are hardly felt—perhaps just pleasantly warm; concentrated, they melt adamant.

The same principle applies to human endeavor. Scattered, a man's energies do not amount to much.

Once they are all focused on a task at hand seemingly tremendous difficulties melt like snow on a hot stone.

Your editor has for many years felt that to get results desired by the profession a closer knit organization is required and more direct interest must be taken by the individual members of the profession in the economic and political problems confronting the profession.

How is this to be done?

By a paid field secretary who shall devote his entire time to problems of the profession, through whose work the fraternity is to become closer knit. The greatest work ever done in real medical organization was done by the A. M. A. through the late Dr. J. N. McCormack of Bowling Green, Ky., who addressed the assemblages of physicians and laymen in different parts of every state in the union some fifteen to eighteen years ago.

The field secretary, by personal interview and by meetings with physicians in every county in the state, must preach the gospel of closer fellowship and organized effort and must with the aid of the organization promote a campaign of education among the laity.

All this will cost money to be sure.

A worker for the Rotary or Kiwanis organization will reach your town, offer you an opportunity to become a member and almost immediately your hand reaches for the twenty-five dollars and before you realize it you have "jined." What is more important to the physician than that which concerns his life work? Would not twenty-five dollars paid by every, or nearly every, physician in the state create a fund by which a field secretary could be paid and work done to the lasting benefit and eternal glory of the profession?

The Committee on Public Activities created by the last House of Delegates looks like a step toward the goal; but the field secretary is needed to bring the Committee's plans to full fruition.

COMMITTEE ON PROGRAM.

The president has appointed the following program committee:

Dr. John Buis, Pender, chairman; Lucien Stark, Hartington, secretary, Medical Section.

Dr. K. S. J. Hohlen, Lincoln, chairman; Dr. J. B. Potts, Omaha, secretary, Surgical Section.

Your President Greet's You



I trust every member of the Nebraska State Medical Association will carry on in the cause of humanity. I can assure you that it is indeed a most noble cause. We are entrusted with heavy responsibilities because we are worthy of trust. A few sometimes waver and wonder if it is all really worth while. Emphatically yes, it is truly worth while, for what greater blessing can come to one than to know that he is rendering service to his fellow man. We are the guardians of the welfare of our great state, for upon the health of its inhabitants depends the prosperity and happiness of its people. There are some who rant about adverse legislation and who feel we are being discriminated against. To those of that opinion I can say that it is not nearly so bad



DR. MORRIS NIELSEN
President N. S. M. A.

Dr. Morris Nielsen, Blair, Neb., president of the Nebraska State Medical Association and ex-president of the Elkhorn Valley Medical Society and of the Washington County Medical Society has been a resident of Blair since 1911. Born in Denmark October 3rd, 1875, he came to Omaha with his parents in 1882. He graduated from the College of Medicine, Nebraska University in 1900. Engaged in practice at Belden, Nebr., for eight years, and did postgraduate work at Harvard Medical School in 1909 and in Berlin and Vienna in 1910. Was member of the Board of Councilors of the Nebraska State Medical Association for six years, serving as president of the body the last three years. He was president of the Blair Chamber of Commerce in 1921 and has always been interested in civic, Red Cross and Boy Scout activities.



as it seems, for the layman is gradually becoming educated to the point where he is beginning to make comparisons and thus drawing his own conclusions. I would hate to admit that such conclusions could possibly be in favor of those who practice the healing art with only a few months preparation.

By encouraging each other

and by being interested and helpful in the problems of our conferees, we will succeed in establishing a definite fellowship as well as exemplify that grand truism "who best can work and best agree." May I ask that for 1924 we bend our united efforts in an earnest endeavor "to serve."

For the Association, and for every member thereof, I wish a happy and prosperous New Year.

—Morris Nielsen.

AN APPRECIATION.

The 31st of December closes the year in which I have been permitted to serve the Nebraska State Medical Association as its president, and it is my desire, in the closing of the year, to thank the Society and its membership for the kindly courtesy that has always been extended to me, and for the great honor and confidence that I recognize in the election to the office of president. I realize I will never be able, in the years that may be left to me, to pay the debt I owe to the medical profession of the State of Nebraska for their fellowship and their confidence, but I shall bear for each and every one of them a real affection, and I hope I may always have in my heart the same feeling of a family association that I have so many times voiced a wish to see among all our colleagues.

For the future year I feel sure of a wonderfully prosperous, helpful year in the Association. I know that the man who takes the helm is so dear to you all that he will command most ardent support, and his ability, his broad vision, and his splendid enthusiasm, is always to be depended upon. He has never been found wanting.

—B. F. BAILEY.

IMPORTANT NOTICE—CALL FOR PAPERS.

At the next meeting of the American Medical Association, May, 1924, a new apportionment of delegates to the House of Delegates will be made. This apportionment will be based on the number of members from each State reported paid April 1, 1924, at the office of the secretary of the American Medical Association. If Nebraska has her full membership paid by that time, she will in all probability be entitled to three delegates instead of two. The yearly dues of five dollars is now overdue. Get the amount in early.

All those wishing to read papers before the next meeting of the State Association will please send their titles and names to the Secretary. This is an especial appeal to physicians out in the State. Send your titles in early and you will be more sure to get a place on the program.

Sincerely yours,

R. B. ADAMS, Sec.-Treas.

RECURRENCES IN CANCER OF THE BREAST.

Dr. J. E. Summers, Omaha, in a paper read before the American Medical Association meeting at San Francisco, June, 1923, (Jour. A. M. A. Sept. 15), agrees with Greenough

and Simmons and says his experience is borne out by those of his colleagues in the Central West, that early removal before lymphatic involvement can be detected gives a percentage of cures of about 70. When the axillary glands are slightly involved, the supraclavicular glands not involved and no metastasis discernable clinically or by roentgenograms, about 33 per cent of cures can be expected. The average case with axillary gland involvement, none other being discernable, gives about 10 per cent of cures. In advanced cases in which radical palliative operation is done there is an occasional cure—about 5 per cent.

He accepts Handley's permeation theory of lymphatic dissemination and advises wider fascial removal and more systematic employment of irradiation in a wide extension along the route of the lymphatics draining the area of the breast involved. He quotes the result of McCarthy's studies on the effects of fibrosis and hyalinization which increases post operative life 40 per cent. He does not accept the present generally taught doctrine, officially promulgated by the American Society for the Control of Cancer, that "cancer is not hereditary," and quotes the result of the studies of Maude Slye with mice by which she was able to breed cancer at will.

THE YOUNG DOCTOR OF TODAY.

In 1906 there were 160 medical schools in the United States; at present there are but 80, of which 74 are non-sectarian in their practice. In 1923 there were 3,120 graduates compared to 5,444 twenty years ago. At present over 90% of medical graduates come from high grade, well-equipped medical colleges, 50% of whom have liberal arts degrees. American Medicine says:

As the energy and knowledge of youth are in so many walks of professional, industrial and commercial life, there is evidence of the gains that may accrue to medicine by affording larger opportunities to this new generation of physicians. They start into active professional life with a training and experience that probably represents a larger degree of practical knowledge than the physicians of a generation ago acquired within ten years of practical experience in the care of the sick. The standardization of medical colleges and increased educational requirements have been of immense public service. There is a degree of satisfying comfort in appreciating that professional status is on a higher

plane, owing to the interest and efforts of the American Medical Association.

EDITORIAL PARAGRAPHS

We cannot know a particular thing until we have had a chance to find it out.

Talking about the broad flat noodle as found in noodle soup in the average cafe. Is there one medical man in Nebraska who can eat it without thinking of *tinea solium*?

The State Medical Examining Board, consisting of Dr. H. J. Lehnhoff, Lincoln, Dr. E. T. McGuire, Fremont, and Dr. J. H. Spats, Fairfield, has voted to make an assessment of five dollars upon each applicant for license to practice in this state in addition to the regular examination fee fixed by law.

One phase of the fee-splitting problem rarely mentioned is the fact that some surgeons charge so much that the patient is led to think there must have been a division of fees between the surgeon and the referring physician. Another phase is that some surgeons take all there is available, leaving nothing for anybody else. No suspicion of fee-splitting there!

The subject, Insulin, is of such outstanding interest to the profession at this time that no apology is needed for offering a succession of papers on the subject. Following the very excellent paper by Dr. J. M. Mayhew last month, we this month publish one by Dr. E. B. Downs, Danville, Ill., a former Nebraska practitioner, now in institutional work in Danville. Next month a paper will be offered by an Omaha internist.

May we not feel a certain sense of pride in the fact that the editors of the Year Book of Surgery have seen fit to recognize, in their abstract department, the following articles published in the Nebraska State Medical Journal during the year 1923: Dr. A. J. Brown's Ventral Hernia—Hemetemesis and Occult Blood in the Stools; Dr. Czar C. Johnson's Breast Tumors—Incidence of Mammary Tumors; Dr. Max Emmert's Breast Tumors.

A death from Rocky Mountain spotted fever is reported from the western part of the state. The patient contracted the disease in

Montana. This disease, resulting from tick infection, was first discovered in the valleys of the Bitter Root mountain region of Montana. It occurs in the valleys of Montana, Idaho, Nevada and Wyoming. The disease somewhat resembles typhoid, but is ushered in by a chill, often repeated chills, and is accompanied by a macular rash over the body, followed by desquamation during the second week of the disease.

OCULISTS, OPTOMETRISTS AND OPTICAL FIRMS

Epoch making acts usually are not recognized as such until long after their occurrence. As a rule, their significance is appreciated only after their effect upon subsequent events has had time to manifest itself. But it is possible that we who are at present engaged in the practice of ophthalmology may be witnessing such an epoch making act, in the position recently taken by a well known wholesale optical house. Briefly stated, this firm has closed out all of its accounts with optometrists, and has announced that it will fill prescriptions only when they are signed by members of the medical profession. In addition, it proposes to inaugurate a campaign, by means of which the public will be educated as to the differences between oculists and optometrists, and the essential limitations of the latter.

Heretofore, oculists have always been on the defensive against the attacks of the optometrists. In common with other "get knowledge quick" groups of pseudo-medical practitioners, the optometrists have been waging an offensive (in both senses of the word) campaign to obtain legal recognition in the several states of the union, and hardly a year passes without the oculists of some state being compelled to appear before its legislature to combat their activities, sometimes unfortunately, to no avail. Whenever the oculists have appeared in an active capacity, it has been before some medical society or in some medical journal, informing their confreres of facts which they already know. They have been barred from the public press, partly from fear of appearing unethical, and partly because the public press, from motives of self interest, or otherwise, has refused to present their side of the question.

This anomalous position has long been recognized, and at the 1921 meeting of the American Academy of Ophthalmology and Oto-Laryngology, a Committee on Publicity and Service was appointed to consider the question of the proper method of acquainting the public with necessary medical facts. This is a step in the right direction, and if it is assisted by the action of the non-medical organizations, so much the better. The present status of refraction is an evolution from the days of the itinerant spectacle vender: but the instruction of the consumer has not kept pace with the progress of those whose duty and privilege it is to supply them with correcting lenses. Anything which tends to alter this state of affairs should be welcomed.

Another phase of this firm's action is its refusal

to supply lenses to optometrists. Oculists in the smaller cities, and those in the larger ones who supply their patients with lenses through the medium of wholesale optical houses, have been forced to obtain such lenses, etc., from the same firms which supply optometrists. Not only is this true, but it is stated that some firms make a special, lower, price to optometrists, thus introducing the element of unfair competition. Optometrists are organized for action; oculists, for science. If oculists would realize what a force their united numbers could exert, by patronizing firms which cater exclusively to them, a revolution would be brought about in the attitude of other firms. They would realize that oculists would have a choice between "fair" and "unfair" firms, and many of them would undoubtedly swing into line. A decided check would be given to the activities of optometrists, for when an army is engaged in preventing the turning of its flank, it has little leisure for aggressive action. When a firm states by words and acts that it does not desire the accounts of a certain group of men, such action exerts a moral force beyond its immediate and direct results. In defending themselves from the implications produced, optometrists will hardly have time to attempt new inroads on the medical profession.—C. L.

"DR. NYE OF NORTH OSTABLE"

In a recent review of Joseph Lincoln's latest Cape Cod story, called "Dr. Nye of North Ostable," William Lyon Phelps pays tribute to the general practitioner in these words:

"I am glad that Mr. Lincoln has taken for his hero the 'general practitioner.' There may come a time when this most useful of all citizens will be extinct. The financial rewards of the successful office-specialist and operator are so infinitely higher, that the general doctor, who makes his round of calls every day, may become obsolete. Let me stop then for a moment and pay him a tribute. The old-fashioned doctor, who drove out in his buggy every morning, visiting his patients at two dollars a head, was an enormous blessing to every community. He accomplished many things that the greatest specialists can never do. He knew his patients and knew them well; he knew their entire family history, and understood perfectly not only what was the matter with them, but whether the immediate case was serious or not, and whether, according to their temperament, they should go away and rest, or whether they should continue their daily work. For with some men, rest in the form of travel is imperative; whereas with others, it would be the immediate prelude to final and eternal rest. The specialist can not be so sure of this as the old family doctor, who brought the man into the world, and knows his ancestral inheritance. And everyone should hold high in his heart the country doctor, who traverses in winter and summer immense distances daily, going into humble homes, having to rely entirely on himself, making major operations in miserable cottages in the worst possible light, with no nurses, and no other doctor to consult. Such men and such professional services are becoming rarer and rarer; how is the countryside to get along without them?"

—International Book Review, Nov., 1923.

THE SOCIETIES

The annual mid-winter meeting of the Sioux Valley Medical Association will be held in Sioux City, Iowa, January 22, 23 and 24, 1924.

The American Association for the Study of Goiter will have its annual meeting in Bloomington, Ill., January 23-25. An excellent program is promised. Dr. J. D. Moschelle, Indianapolis, Ind., is secretary.

The regular meeting of the Keith-Perkins County Medical Society was held at Sutherland, Nov. 14. The first thing on the program seems to have been "a sumptuous oyster stew with apple pie." Case discussions featured the meeting, reports of cases being given by Drs. Vandiver, C. C. Wallingford, Ogallala; C. F. Heider, Sutherland, and R. A. Young, Madrid.

The Nebraska Section, American College of Surgeons, will have a clinical meeting in Omaha, Feb. 18-19. Dr. J. P. Lord, Omaha, is chairman of the committee of arrangements.

The Red Willow County Medical Society met in McCook, Nov. 13. Officers elected: Dr. W. D. Mackechnie, Indianola, president; Dr. C. F. Lyle, Indianola, secretary-treasurer.

Dr. Elizabeth Hohl, McCook, gave a paper on Sporotrichosis; Dr. J. M. Willis, McCook, read a paper on Duodenal Ulcers; Dr. R. R. Reed, McCook, gave a report of the Tri-State Medical association meeting at Des Moines.

A banquet was served.

The University of Nebraska College of Medicine Alumni Association annual reunion was held in Omaha, November 14, 15, 16. Clinics were given the first day in surgery by Drs. J. E. Summers, A. J. Brown, C. H. Waters and Delmar Davis. Following the noonday luncheon, Dr. A. F. Jonas spoke on the Indications for Gall-Bladder Surgery. Dr. Allen B. Kanavel, professor of surgery Northwestern University, as special guest of honor, gave an address at a smoker at the Athletic club on Surgery of the Hand. On the second day medical clinics were given by Drs. W. N. Anderson, George Pratt, Lynn Hall and Rodney Bliss. Dr. E. L. Bridges, Omaha gave the after-luncheon talk on the Management of Diabetes with Special Reference to the use of Insulin. The Home Coming Dinner was given at the University Club followed by addresses by the president, Dr. W. H. Taylor and by Regent John R. Webster.

The last day's clinic was by Dr. C. C. Tomlinson, on the skin; Dr. C. W. Pollard, on pregnancy; Dr. R. D. Schrock, on orthopedics and Dr. H. M. McClanahan on pediatrics. At the luncheon Dr. H. Gifford, spoke on Differential Diagnosis of Common Eye Affections.

Dr. C. W. M. Poynter was elected president, Dr. F. W. Nicholas, Omaha, secretary-treasurer.

The Woman's faculty club entertained the wives of physicians.

The 112th meeting of the Nebraska Section of the American Chemical Society was held Monday, November 26, at 8:00 p. m., in Chemistry Hall, at the University of Nebraska.

Dr. Cliff O. Hamilton, of the department of Chemistry, University of Nebraska, spoke on "Organic Compounds of Arsenic and the Chemo-therapy of Trypanosomiasis and Syphilis."

Dr. Hamilton has recently become Assistant Professor of Chemistry at the University of Nebraska. He has worked for a number of years at Northwestern University and the University of Wisconsin on the synthesis of arsenic compounds for use in medicine.

Special guests of the evening were the members of the Lancaster County Medical society.

The annual meeting of the Cedar-Dixon-Dakota-Thurston-Wayne Counties Medical Society was held at Randolph, Nov. 20.

Dr. J. M. O'Connell, Ponca, read a paper on Child Development; Dr. John Buis, Pender, on Insulin; Dr. R. E. Bray, Martinsburg, Diagnosis and Treatment of Pneumonia.

Dr. A. E. Cook, Randolph, was elected president; Dr. C. L. Philips, Dixon, secretary-treasurer and Dr. Lucien Stark, Hartington, delegate.

A banquet was served after the meeting.

The Omaha division of the Nebraska Medical Women's Society entertained the medical women of the state and of Council Bluffs, on the evening of November 17, at the Y. W. C. A., of Omaha. Special guests of the evening were Dr. Mathilda Hunt of London, Eng., and Dr. Mary McQuaker, of Glasgow, Scotland. Dr. Hunt gave a review of medical management of health conditions among women and children in London during the war. Dr. Marie L. Grote, of the Lincoln state hospital staff, spoke on the etiology of mental diseases and their relationship to present day social conditions. Dr. Katharine L. Wolfe, Lincoln school physician, talked on nutritional conditions as handled in the Lincoln city schools.

Out of town guests present at the dinner were Drs. Inez C. Philbrick, Katherine H. Wolfe, Ruth Warner, Margaret E. Hammond, Marie L. Grote, May L. Flanagan and Margaret R. Koenig of Lincoln, Neb.; Dr. Alma J. Chapman, York, Neb., and Drs. Ericksen-Hill, and Harriet S. Hamilton, Council Bluffs.

Among Omaha women present were: Drs. Emelia H. Brandt, Nora M. Fairchild, Mattie L. Arthur, Alice Kani, Jennie Callfas, Kathleen O'Connor-Sullivan, Freeda P. Clark, Marcia Young, Hannah K. Johnson, Mary Bratt, Delia A. Lynch and guest, Miss Finney.

The Nemaha County Medical Society met November 30, at Auburn, and elected the following officers for the coming year:

President—Dr. E. M. Tyler, of Auburn.

Secretary-Treasurer—Dr. B. A. Smith, of Auburn.

Delegate—Dr. B. F. Lorange, of Auburn.

Dr. Palmer Findley, Omaha, gave an interesting and instructive talk on uterine hemorrhage, illustrated with slides.

Dr. George P. Pratt, Omaha, gave a very interesting talk on Digitalis, dwelling especially on its use in pneumonias.

Dr. I. W. Irvin, Auburn, gave a short talk on X-ray Therapy with case reports especially interesting to the general practitioner.

The annual meeting of the Sixth Councilor District Society was held at York, Dec. 4. About thirty-five were present. All the papers were very good and the discussions lively; in fact, it is said to have been one of the most successful district meetings of the year.

The following papers were read:

"Nitrous Oxide Analgesia in Obstetrics," Dr. J. H.

Wertman, of Milford; "Public Health," Dr. P. H. Bartholomew, State House, Lincoln; "The Use of Insulin in the Treatment of Diabetes," Dr. Frank Conlin, Omaha; "Impressions Gained in Pediatrics at Harvard Post Graduate School," Dr. E. S. Wegner, York; "Meckel's Diverticulum as a Factor in Intestinal Obstructions," Dr. H. O. Bell, York.

At the Madison County Medical Society meeting Norfolk, December 11, Dr. J. D. McCarthy, Elgin, Nebr., read a paper on "Empyema Complicating Pneumonia," and Dr. W. R. Peters, Stanton, a paper on "Irregularities of the Heart."

Dr. A. M. Sonneland, Norfolk, was elected president; Dr. G. E. Charlton, Norfolk State Hospital, secretary-treasurer, and Dr. A. E. Gadbois, Norfolk, delegate.

The Hall County Medical Society at a meeting at Grand Island, December 7, elected Dr. Frank D. Ryder, president; Dr. W. W. Arrasmith, secretary-treasurer, and Dr. E. G. Johnson, delegate.

Dr. E. G. Johnson read a paper on "The Public and the M. D.," Dr. E. A. Watson a paper on "Commercializing the Practice of Medicine."

This society has a yearly calendar and program, the uncompleted portion of which follows:

January 4:

"The Question of Sex Education in the Schools—Pro and Con," W. T. Engleman and B. R. McGrath; "Diseases of the Cecum," E. E. Farnsworth.

February 1:

"The Treatment of Diabetes—A Survey," W. J. Raynor; "Nasal Infection as a Factor in Asthma," D. H. Carson; "The Spasmophilic Diathesis," J. V. Reilly.

March 7:

"X-Ray Treatment of Skin Diseases," R. C. Woodruff; "A Case," Leo Phelan; "Infection of the Ethmoid Cells," J. E. Higgins.

April 4, subject "Law," Wm. Suhr.

May 1, Banquet.

At the annual meeting of the Phelps County Medical Society, Holdrege, December 5, Dr. R. D. Green, Holdrege, was elected president, Dr. J. L. Magill, secretary-treasurer. Dr. Rachel Long and Dr. R. D. Green entertained the members at a 7 o'clock dinner.

At the annual meeting of the Omaha-Douglas County Medical Society, December 11, Dr. G. W. Dishong was elected president and Dr. Earl C. Sage secretary-treasurer.

HUMAN INTEREST TALES

Loomis, Nebraska, is without a physician.

Dr. J. S. Broz, formerly of Omaha, has located at Dodge.

Dr. David Woodruff has moved from Loomis to Holdrege.

Dr. R. W. Place, formerly of Spencer, has located at Osmond.

Dr. F. J. Kalal, recently of Haigler, has located at Clutier, Iowa.

Dr. S. A. VanOsdel, formerly of Johnson, has located at Auburn.

Dr. Molly McQuaker, of Barr, Ayrshire, Scotland, has located in Omaha.

Dr. H. F. Leedom, said to hail from Lynn, Ind., has located at Kearney.

Dr. C. C. Barr and Dr. Perry Allerton, Tilden, have formed a copartnership.

Dr. F. H. Milliner, Omaha, noted electrician, is reported ill in a Los Angeles hospital.

Dr. R. R. Ensor has disposed of his medical interests at Kearney and moved to Omaha.

Dr. Philip Romoneck has returned to Omaha after six months of study in Prague and Vienna.

Dr. Delmar L. Davis, Omaha, spent two weeks in late November in Chicago, Buffalo and Cleveland.

Dr. M. J. Ford, Omaha, gave the principal address at the Morron Park community meeting, Nov. 30.

Dr. H. F. Hewitt, and Dr. G. O. Remy, Ainsworth, have become associated in the practice of medicine.

Dr. M. F. Hall, Neligh, has provided hospital facilities on a small scale, the better to handle his practice.

The father of Dr. E. P. Murdock, Alliance, Dr. E. P. Murdock, Sr., died in Chicago, Nov. 15, aged about 78 years.

Dr. C. E. Slagle, Alliance, recently gave an address on the history of medicine before the local Rotary club.

Dr. C. L. Hustead, Falls City, before the local Rotary club, spoke on the value of the hospital to the community.

Dr. Frank J. Kotlar and wife, Snyder, expect to go to Vienna, for a year of postgraduate study, early in the year.

Dr. W. C. Zulauf has located at Long Pine. He has been connected with St. Joseph's hospital, Sioux City, for some time.

Dr. B. F. Lorange, Auburn, recently gave an address on Health and Hygiene before the students of the Peru Normal school.

Dr. E. S. Wegner, York, has recently returned from a month's study in the pediatric department of Harvard Medical school.

Dr. H. Winnett Orr, Lincoln, presided, Nov. 24, at a dinner given in honor of Dr. John Ridlon, noted Chicago orthopedic surgeon.

Dr. Donald Macrae, Council Bluffs, Ia., was elected president of the Western Surgical society at the Colorado Springs meeting, Dec. 8.

The Doctors' Wives' club of Omaha gave a luncheon the latter part of November at the Nurses' home of the University of Nebraska hospital.

The malpractice suit against Drs. Hustead and Fouts, involving x-ray burns, in the district court of Richardson county, was decided in favor of the defendants.

Dr. John W. Shuman, formerly an internist at Sioux City, more recently professor of internal medicine at the American University, Beirut, Syria, has located at Los Angeles.

Dr. and Mrs. J. S. Lancaster, Torrance, Calif., were visitors at York the latter part of November and Dr. and Mrs. Robert McConaghy gave an informal reception in their honor.

Prof. A. Biedl of the University of Prague, spoke before the Douglas County medical society recently on the relation of cerebral and other glands to bodily nutrition and personality.

Dr. A. J. Stewart, Mitchell, for some years one of the Councilors, has accepted a position as medical missionary under the auspices of the Congregational church, at Shao Wu mission, in the interior of China, and will sail at an early date. Dr. F. M. Collins, who recently became associated with Dr. Stewart, takes over the practice.

The following Nebraska doctors attended the annual meeting of the Radiological Society of North America, held at Rochester, Minn., on Dec. 3rd-7th: Drs. H. W. Benson, Oakland; L. W. Rork, Hastings; E. W. Rowe, Lincoln; W. A. Rush, Beatrice; F. M. Barns, Albion; R. C. Woodruff, Grand Island; and W. L. Ross, Sr., T. T. Harris, C. H. Ballard, A. F. Tyler, D. T. Quigley, H. L. McLeay and A. P. Overgaard of Omaha.

The following medical men have very recently taken offices in the new Bankers' Reserve Life building, Omaha: Dr. W. O. Bridges, Dr. E. L. Bridges, Dr. John E. Summers, Dr. Clyde A. Roeder, Dr. Chester H. Waters, Dr. J. Jay Keegan, Dr. C. C. Tomlinson, Dr. Edwin Davis, Dr. Earl C. Sage, Dr. Arthur D. Dunn, Dr. Warren Thompson, Dr. William P. Wherry, Dr. A. P. Overgaard, Dr. C. H. Ballard, Dr. Erskine M. Barnes, Dr. Lynn T. Hall, Dr. Joseph A. Weinberg, Dr. Ralph Luikart, Dr. James G. Fowler, Dr. William B. Moody, Dr. G. D. Whitcomb, Dr. David Isaacs, Dr. Henry Lemere, Dr. John Banister.

NECROLOGICAL

Dr. H. A. Skelton, Spencer, Nebr., Keokuk Medical College, 1891, a pioneer physician and surgeon on the northern border of the state, died November 29, of apoplexy, aged 56 years.

Dr. Skelton came from Indiana to North Nebraska in 1883, worked in a drug store, became a registered pharmacist, later studied medicine and engaged in practice for ten years at Page, after which he moved to Spencer where he established a small hospital, which in succeeding years developed into an institution of considerable size and attained good repute in that section of the state and throughout the Rosebud country of South Dakota. Dr. Skelton was a capable physician and a skillful surgeon.

Besides a widow, he leaves two sons, one a dentist in Oklahoma and the other a medical student at the Minnesota University.

Dr. Walter A. Guidinger, Long Beach, Calif., Chicago College of Medicine and Surgery, 1907, died September 18, aged about 42. Until a few years ago the deceased was in practice at Dodge, Nebr.

Dr. Clement A. Stone, Hastings, Nebr., Creighton Medical College, 1900, died October 30, aged 47.

Dr. William Clark Robinson, Dewitt, Iowa; Missouri Medical College, 1880, died Nov. 26. The deceased for many years had his home at Clarks, Nebr., and there he was buried.

Dr. D. S. Woodard, Aurora, College of Physicians and Surgeons, St. Joseph, Mo., 1882, a practitioner at Aurora for twenty-five years died of myocardial disease, November 28, aged 75.

Dr. Woodard was a native of Virginia, came west in early manhood and after graduating located first at Hampton in Hamilton county, but moved to Aurora in 1897. He was a member of the lower house of the Nebraska legislature two terms, was assistant superintendent of the State Hospital at Ingleside 1899-1901 and superintendent of the Lincoln State hospital 1909-1911. He took much interest in religious, civic and political matters and his passing marks a distinct loss to the community. He leaves besides a widow, a daughter and five sons, two of whom are physicians—Dr. D. S. Woodard, Watsonville, Calif., and Dr. J. S. Woodard, Aurora, Nebr.

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CONTENTS

	Page		Page
Fear and Obstetric Efficiency, Inez C. Philbrick, A. M., M. D.....	41	EDITORIALS—	
A Few Facts About the Circulatory System, B. F. Lorange, M. D.....	47	Important	70
Disturbances of Gastric Function, H. J. Lehnhoff, M. D.....	51	Call for Papers.....	70
Compensible Injuries Under the Workmen's Compensation Act, Czar C. Johnson, M. D., F. A. C. S.....	54	A Misspent Life.....	70
The Psychology of the Treatment of Tuberculosis, Miles J. Breuer, M. A., M. D., F. A. C. P.....	58	True and False Publicity of Medicine..	70
Abdominal Trauma, Chas. H. Root, M. D.	62	Malpractice Suits.....	71
Abscess of the Liver, B. R. McGrath, M. D., F. A. C. S.....	63	Correction of Extreme Flat Foot.....	72
Hemoperitoneum: Report of a Case, F. L. Wilson, M. D.....	65	Medical Missionary to China.....	72
		Editorial Paragraphs.....	73
		Optimism and Pessimism.....	73
		Announcement	73
		Nebraska Section, Clinical Congress, American College of Surgeons.....	73
		The Societies.....	74
		Necrological	75
		Human Interest Tales.....	76
		Books Received.....	76

FEAR AND OBSTETRIC EFFICIENCY*

Inez C. Philbrick, A. M., M. D., Lincoln, Nebr.

In the beginning, let me assure my fellow members that my choice of subject does not indicate that, as a result of advancing or arrived senility, I have become a Christian scientist, although I, as any intelligent member of the profession, must admit that whatever its failure to rationally interpret the nature, operation, and effect of fear in the causation and aggravation of disease, Christian science has possessed itself of a profound scientific truth which the medical profession should long ago far more generally have recognized and applied.

Inevitably, in the course of a quarter century and more, types of organic disease seen by any member of the profession must change, the change being due to advancing

scientific discovery, changing social habits, shifting populations, changing industrial methods, popular health education, the introduction of new industries with new diseases and new hazards, and so forth. Just as reasonably, we may predicate new types of disease the result of deranged physiology, the cause, the operation of new environmental forces.

In looking back through thirty years at a fairly large experience in the private practice of obstetrics, it has seemed to me that I recognize a decided difference in the average type of obstetric case met now, as compared with that met in my earlier years of practice, the difference seemingly one of disturbed physiology rather than of acquired pathology—the difference shown in a far more

*Read before the Lancaster County Medical Society.

common lack of muscle efficiency in the second stage of labor. Admittedly, we have had in recent years, in the use of pituitrin, a method of therapeutic proof which has made the diagnosis of muscle inefficiency easy; but this ease of diagnosis will not account for the fact that whereas in my early years of practice this type of difficulty seemed the exception, it now appears almost the rule.

We frequently hear these days, especially from members of the medical profession, the statement that the modern woman has become incapable of normal childbearing, the cause being often laid at the door of the higher education, ignoring the fact that this factor covers but a small part of the nervously exhausting conditions of our modern life.

In my opinion there are neither proofs nor probabilities for a decreasing organic fitness of our women for childbearing. Physiologically speaking, the nervously exhausting quality of our modern life is to be deplored; but there are many counter-balancing factors—the release of the present day woman from the oppression of the same four walls; the school and college girl's greater participation in outdoor exercise and sports; the abandonment of the old type of constricting corset; the loose modern dress, with its ample waist, light and short skirts; for girls and women in industry, the shorter hours, more sanitary surroundings, higher wages; and so forth.

The apparent increase in recent years in the pathology of labor can be due to but one or more of three factors—changes in pelvis, in foetus, or in the powers of labor.

The bony pelvis is admittedly an inherited part, its distinctly feminine type adapted to childbearing by natural selection operating through several hundred thousand years of natural childbirth. Natural selection has ceased to operate in our artificial modern life; but were it operative, no impression upon the pelvis could be made in so infinitesimal a portion of time as a quarter century. Organic sports appear very rarely, and hence pelvic contraction and deformity due thereto, in a short space of time, is unthinkable. Better treatment of leg fractures, lessened incidence and better treatment of hip joint disease, have during recent years militated more and more against obliquely deformed pelvises.

No demonstrable change has taken place in the size of the foetus in recent years. A recent questionnaire answered by a number of the leading obstetricians of the country, plac-

es the average foetal weight at the figure given years ago in our text books, and affirms the extreme rarity of overweight children—ten pounds and above. Outside occiput-posterior positions, which, generally speaking, require only sufficient time for correction, faulty presentations and positions are very rare.

Moreover, certain recent investigations go far towards disproving, for the well-to-do stratum in our society, the alleged increasing unfitness of woman for childbearing. Recent study of the physical records of more than twenty thousand college women, from east and west, some in our own university, these women constituting a representative cross section of the college women of the country, the records extending over from twenty to thirty-seven years, has proven decided increase during these years in weight, height, chest capacity, girth of waist, and decrease in incidence of menstrual pain.

Therefore, I think it is reasonable to assume that the cause of apparently increasingly difficult childbirth must lie in the powers of labor—in physiology. A discussion of the probable cause of this disturbed physiology is the purpose of this paper.

All scientific analogies point to childbirth as intentionally (in the evolutionary scheme) a physiological and involuntary process. All those bodily activities upon which depend preservation of the individual life and of the racial life, are put in control of the sympathetic nervous system—the evident creative intent being to withdraw them, in so far as possible, from mental and emotional control. Is it not reasonable to assume that the farther we wander in practice from this foreshown path, the more interference there is, on the part of patient and physician, with this intentionally physiological and involuntary process, the more emotion is brought into play in connection with the process, the more surely do we incur disaster?

Said F. W. Mott, before the Harveian society of London, in 1917, "An emotive preoccupation concerning the particular function of an organ or structure, by inhibiting the normal automatic action, determines a disordered function of that organ. For we know that any organ or structure which naturally, or by habit, performs its function automatically, becomes disordered in its function when there is mental apprehension and preoccupation regarding the performance of that function."

And Dr. Alexander McPhedran, of Toronto, in an address given before a number of Canadian medical bodies in 1922, said, "Ailments of emotional origin may affect any function of the body, and cause as great a variety of symptoms." And a Chicago physician, in the discussion, states what I might well take as a text—"Whether it be in animal or human being, the greatest point in the cure is to give the individual the experience of the feeling of safety."

I am convinced that the emotion of fear, engendered in the patient by the teaching and practice of the medical profession, and in the medical profession by the teaching in the medical schools, is a very large factor in accounting for the apparent increase in recent years in obstetric pathology. It is not that women are becoming incapable of bearing children naturally; it is that the profession will not let them. A profession taught the pathological nature of obstetrics, thinking pathology, practicing pathology, will necessarily find pathology.

There is little to be found in our recent medical journals on the effect of fear on physiology in general, and nothing upon the effect of fear upon the childbearing function. An abstract of medical literature for the past five years, made for me by a senior medical student in our university, and checked by myself in a half-day spent in the library at Omaha, gave only four articles of value for my purpose. Professor Cannon's book, loaned me by the librarian, its title being, "Bodily Changes in Pain, Hunger, Fear, and Rage", I found most suggestive.

Cannon quotes Langley and Anderson to the effect that the nerves of the sacral division of the autonomic system have no effect upon the internal generative organs—that the uterus is supplied by the lumbar branches of the sympathetic division. While authorities affirm that the topography of the sympathetic nerve fibres in the brain has not been worked out, they affirm their existence, by the effects of emotion on the sympathetic system.

It has been proven that fear and allied emotions stop the secretion of saliva, gastric juice, pancreatic juice, and bile. Why not that of the pituitary gland? Fear causes an out pouring of adrenin—an antagonist of pituitrin. Fear stops the motor activities of the stomach and the bowel. Why not of the

uterus, the uterus being supplied by nerves from the same division of the sympathetic?

Before the days of pituitrin (for I never now use forceps without first trying out carefully the effects of pituitrin) I have had this experience repeatedly. Having finally decided upon the use of forceps, and having told my patient that she would be put under full anaesthesia, and would feel nothing, and having impressed upon her the fact that she would be in no danger, during preparation for the extraction I have had the patient expel the child with two or three vigorous pains, decidedly more vigorous than any she had had during her entire second stage. Evidently some inhibiting force had ceased to act. Again, after seemingly interminable waiting, I have had dilatation go on rapidly under full ether anesthesia or morphine, given temporarily to rest the patient. We all have found that, using the same lot of pituitrin, different patients react very differently—in my opinion due to varying quantities in the blood of an antagonistic secretion, probably adrenin.

Have our obstetrical patients today reason to fear childbearing?

When I entered the Woman's Medical College of Pennsylvania thirty-five years ago, and entered at once upon the study of obstetrics, said study to continue throughout the entire three-year's course, one of the first statements impressed upon us, and frequently reiterated throughout the years, was that childbirth is a physiological process in the vast majority of cases, unless complicated by uncleanness or interference.

That in recent years we have wandered far from this scientifically correct, and in practice, safe conception of childbirth—that there is a decidedly pathological trend in opinion regarding the nature of the process, is apparent to all of us who have practiced obstetrics for many years. Statements from leading practitioners of obstetrics, the papers appearing in our medical journals, the subjects discussed in the sessions of medical societies, present day obstetrical practice—all these reflect this pathological trend.

At the International Congress of Obstetricians and Gynaecologists, at London, in 1913, DeLee made the statement that labor is no longer a physiological process, that it has become a pathological one—a statement many times since made and strenuously defended by himself and others, and belief in which

statement is reflected in the obstetric methods of a large number of the profession.

In going through the files of the American Journal of Obstetrics and Gynaecology for the five years from 1913 to 1917 inclusive, I found 226 papers on pathological aspects of childbirth, and 47 on physiological—five-sixths on pathology, and one-sixth on the proper conduct of the normal and usual obstetric case. A careful examination of the volumes on obstetrics and gynaecology of the Practical Medicine series, edited by DeLee and Dudley, for 1920, 1921 and 1922, showed 193, 157, 31 on the pathology of pregnancy, labor, and the puerperium respectively; and 30, 22 and 3 on the physiology of pregnancy, labor and the puerperium respectively—381 on pathology to 55 on physiology—seven to one pathological.

Discussions before bodies of obstetricians are largely discussions of pathology—necessarily, as the papers giving rise to them are largely upon the pathological aspects of childbirth. A leading St. Louis member of the Section of Obstetrics and Gynaecology of the American Medical Association, recently stated before the Section that many of the members were tired of coming to the Section meetings year after year and getting nothing helpful to carry home with them. Dr. R. Peterson in his chairman's address before the Section in 1920, referring to an all too common type of member, said, "At meetings he would spend hours in the discussion of technique, and suddenly feel the need of fresh air when a paper was read on a non-operative topic, equally important and necessary to his specialty, as it should have been practiced. He was bored to extinction by everything connected with the proper conduct of pregnancy, labor and the puerperium, which if uniformly carried into effect would have made the larger part of his operative work unnecessary."

Such being the trend of obstetrical writing and discussion, we could but expect a too prevalent obstetrical practice reflecting the conception of childbirth as a pathological process. No more glaring example of pathological practice can be instanced than that of Potter, with his record of 1113 cases attended in a single year, 920 of which were versions, 80 cases of which versions terminated in Caesarean Section. H. W. Webster writes, "Potter has reduced the science of midwifery to two procedures—section and delivery, after version, under full anaesthesia."

In Potter's work we see pathological obstetric practice at its worst and best—worst as to extent of interference and best as to results—and this best, 8% maternal mortality, does not recommend his work. Another striking example of the practitioner of pathological obstetrics is the Chicago physician, cited by DeLee, "who has in the lay press announced his practice of bringing on labor at term by means of bags and pituitrin, forcing the delivery between morning and evening, and boasting that for a year he has not been up at night."

Lincoln and Omaha have their counterparts of these men. Some months ago I refused offered delivery by the Donley-Stahl Company of a pair of elbow rubber gloves, for use in version by Potter's method, and an Omaha surgeon told me a few months ago of an acquaintance of his who when the calculated date for her labor arrived, with no sign of labor present, was ordered to the hospital by her physician, put under anaesthesia, and delivered without her knowledge, by what method he did not state.

More than once in recent years have I had reason to suspect that some member of our own profession has pursued a like policy—by inadvertence, mistaking false pains for true, assuming the presence of labor when none existed, and terminating a pregnancy artificially, by Caesarean or other method. However, suspicions aside, we are all aware of the fact that increasingly, in recent years, the practice of those doing most obstetrics has been interference and hospitalization. Whatever one's inability to pay present hospital prices, the patient is practically forced into the general pay hospital—for normal labor, for forceps delivery, for the simplest of procedures—removal of a retained placenta, the cleaning out of retained fragments following abortion, and so forth.

I contend that all this tends to produce in the patient a mental state of dread and anxiety, rather than that feeling of safety all essential to normal physiological action.

If by all this spectacular performance we were saving more and more patients, we could not protest. But we are not reducing maternal mortality. A careful study by the Children's Bureau has proved our maternal mortality not to have been lowered in the thirty-three years—1890 to 1923, this in spite of the fact that, certainly during the past decade, there has been a great increase in prenatal care, and that throughout this per-

iod we have been possessed of those two major blessings of surgery—aseptic technique and narcosis. Unquestionably, the capability of these latter agents of lessening morbidity and lowering death rate has been nullified by their having made possible the present day operative orgy. They have made interference temporarily comfortable for the patient, and have shortened the doctor's labors, and increased his fees.

If women are again to be given the right and privilege of bearing their own children, if they are to be given the feeling of safety, thereby restoring normal physiological action, this orgy of operative interference must cease.

In the first place, hospitalization (wrong in principle and disastrous in practice) must give way to the home delivery of all save a very small minority of cases—those presenting serious obstetrical complications, or those who have not adequate or not decent surroundings in the home. These would not constitute 10 per cent of all cases. The hospital at its best, the strictly maternity hospital, with its elaborate equipment and numerous staff, offers too great temptation to the conscienceless, or incompetent, or rash practitioner, and makes interference in the otherwise normal case too easy. To take the normal obstetrical case to a general medical or surgical hospital, into which are brought, by patients and visitors, all manner of pathogenic organisms, where a slip of technique that in a private home would be harmless, might in the hospital prove fatal—such a course is not only opposing scientific knowledge, but common sense. Hospitalization of all obstetrical patients is a confession of professional incompetency.

Again, to safeguard the small minority of cases that must be taken to hospitals, professional admission to hospitals must be made vastly more discriminating. Today, in too many hospitals, a doctor without professional attainments, and without character, can subject his patient to any operative procedure whatsoever. I am convinced that the reading of the true case records of many a large hospital would abundantly satisfy any craving for tragedy and horror.

A potent cause of obstetric pathology is that the practice of obstetrics is in relatively large proportion in the hands of young practitioners—versed in theory, skillful in technique, for the most part pathologically mind-

ed, due to their teaching, possessed of knowledge, but not of wisdom. McLorinan, of Australia, in the volume on Obstetrics and Gynaecology of the Practical Medicine Series for 1921, says, "One has only to investigate the records of the out-patient department of any hospital to find that more than half the women are permanently damaged by this so-called normal function."—an extravagant statement, but one which points the special danger incident to out-patient practice—it being largely in the hands of recent graduates and young internes.

To no young practitioner should decision be left as to resort to major surgery, or to operative interference in obstetrics. Such decision requires obstetric judgment, which can only come with experience. The young practitioner will take risks that an older will not. As illustrative of this I recall the recent instantaneous death of a patient in whom a young practitioner was inducing spinal anaesthesia. We do not have enough papers in our medical journals by older members of the profession. We do not hear these older members often enough in discussion. It is a misfortune that in our medical societies as at present organized, the older members are drawn as counsellors, and give their energies to the organization of these societies, rather than to their scientific programs.

Again, in meeting the inevitable, though rare, complications of pregnancy, labor, and the puerperium, we must return to the simple—the simplest treatment. Increasing complexity of methods spells increasing ineffectiveness, and increasing danger, as it puts needed medical service beyond the reach of many patients, and opens more avenues to the entrance of complications. Fortunately, the present trend on the part of the ablest in the profession, as indicated by texts, papers, and discussions, is toward the older, simpler, and well tried methods in dealing with the inevitable obstetric complications: for example, depending upon reduced metabolism, increased elimination, and sedation, in eclampsia, rather than upon forced delivery; packing rather than Caesarean Section for placenta praevia; non-interference in sepsis, save exploring the uterine cavity and removing any retained fragments with the finger; and so forth.

Says DeLee, "For the rank and file of practitioners, watchful expectancy is still the best treatment." Why, may I ask, should he confine an attitude of watchful expectancy to the rank and file?

Personally if I were a parturient or puerpera, and had to die (and I have never seen any such saved by spectacular performance), I would prefer to die from sins of omission on the part of the attendant, rather than from those of commission—a more comfortable end. As I look back upon one of my three fatal cases of labor—a case of virulent sepsis in one of our best hospitals—and think of the curettage by myself, of the three or four pelvic examinations by as many examiners, of the later hysterectomy, advised by consultants, and performed under protest by the surgeon, I shudder! How much better for her had it been had she been beyond the reach of hospital and doctors!

If we are to do away with pathological obstetric practice, we must outlaw the self constituted obstetric specialist, trained in pathology, thinking pathology, and too often commercially minded.

Again, if we are to return to the physiological conduct of labor—a physiological process—we must put the practice of obstetrics upon a non-commercial basis—upon a professional basis, as is public education. Necessarily, where operative interference spells a larger fee, we shall have operative interference in plenty. We must have state medicine, with the strictly maternity hospital for those who cannot be safely delivered in their home, and a standardized normal procedure, to be departed from only on the recommendation of a consultant staff.

I am rejoiced to find each year more sentiment to this effect. Miles F. Porter, in his president's address before the twenty-sixth annual meeting of the National Association of Obstetricians and Gynaecologists, said, "Relief from the deplorable situation lies in the direction of educating the public, which in the course of time would lead the state to provide free, or at a nominal cost, to all pregnant women who care to avail themselves of the offer, the best attention in well regulated maternities." Hugo Pantzer in his president's address before the twenty-ninth annual meeting of the National Association of Obstetricians and Gynaecologists, said, "I cannot close this address without uttering what seems to me shall and will be the ultimate solution of all these perplexing and formidable questions, medicine and sanitation must be made state functions."

Pathologically-mindedness of the profession, and of the laity, operates in a vicious

circle—it encourages operative interference, and this interference contributes to pathologically-mindedness. If we are to get away from pathological obstetrics, we must get away from pathological psychology. Even if childbearing were a pathological process, it were best to deny it. Such procedure would give far greater comfort and efficiency to the pregnant and parturient woman. Inevitably, if women be imbued more and more with belief in the pathological nature of childbirth, they will more and more refuse to bear children. And this spells racial extinction—whether or not considered an evil depending upon one's philosophy of life. The best working hypothesis, and fortunately that one in harmony with fact, is that childbirth is a physiological process—and should be treated as such.

Prenatal care (insuring the normal physiology of the pregnant woman), and a policy of non-interference in labor, will go far toward eliminating obstetric casualties. In addition, all other possible sources of fear and dread must be eliminated. I recall several experiences of the past few months, the recounting of which is here relevant—a primipara, delivered in our largest hospital, neither doctor nor nurse present at the time of delivery; the wild ride of another primipara from her farm home to the hospital, labor being so far advanced that each pain she feared would complete delivery; a multipara delivered by the nurse while her physician was engaged in rapid transit between her home and the hospital two miles away, where another patient was in labor; and others the enumeration of which time forbids.

In my judgment, the ideal environment for the woman in labor is her own home, a good nurse (not necessarily an R. N.), and a good doctor, who comes early and stays by.

The following advice could be given to those who first are called in to care for and to transport the victim of a compound fracture. After cutting off the clothing so that the fracture can be well inspected, the fractured area itself is not to be touched except that some form of antiseptic solution might well be flooded over the area and a sterile piece of gauze, moistened with such an antiseptic, should be placed over the wound to seal it, from then on, from external contamination. No attempt at reduction or manipulation is to be made.—Dr. Wallis G. Stern (Ohio State Jour. of Med.)

A FEW FACTS ABOUT THE CIRCULATORY SYSTEM*

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According to the vital statistics put out by the U. S. Government from year to year, one in every fourteen deaths is due to cancer; one in twelve to pneumonia; one in twelve to tuberculosis; one in five to disease of the heart or other pathology in the circulatory system.

Since it appears from these facts that there are twice as many deaths from heart disease and other pathology in the vascular system as from any other one cause, and, since it is true that the heart and vascular system become dominant factors for consideration in any case of sickness, it can be seen that a paper touching such a vast field as the circulatory system must be limited to just "A Few Facts."

Leaving out of consideration all phenomena observable in the circulatory system, which are strictly physiological, the subject may be discussed in this fashion: First, phenomena, which in appearance seem to be pathological, but which in reality are physiological. Second, phenomena, which, though pathological, are not of serious import. Third, pathological phenomena of serious import.

All who practice the healing art should ever be on the alert to carefully differentiate between physiology and pathology. In some fields this necessity is more worth while than in others. Thus, while it is important that the throat specialist should carefully discriminate between physiology and pathology, understanding that it is a physiological fact that the tonsils in all children under fourteen years are comparatively large, these organs beginning to atrophy at puberty, in most cases practically disappearing by the time adult life is reached; and, while it is important that the child specialist should take into consideration the physiological fact that the thyroid gland in girls becomes active and comparatively large at puberty to subside to lesser proportions with the attaining of the adult stage, it is of vastly greater importance that the internist should take great pains to differentiate between physiology and pathology when considering the circulatory system in any of its aspects.

Of these phenomena in the circulatory system, which, though physiological, have the appearance of being pathological may be men-

tioned, first, the irregularity of the heart action observable in most children and some adults during respiration; second, the palpitating, rapid, irregular or tumultuous heart action in young people after puberty and before reaching the adult stage; third, the intermittent pulse quite often seen at any age, but especially in persons past forty years.

Taking up these physiological classes in detail: It is most interesting to count the pulse of any child while he is asleep and observe the heart action, as it will be found that during inspiration the pulse will be very much more rapid than during expiration. This seeming irregularity is well nigh universal, is strictly physiological and not pathological. Mention is made of this here for the reason that specialists tell us that knowledge on this point is not universal among the members of our profession.

Of these physiological phenomena, the palpitating, irregular, rapid, or tumultuous heart of adolescence is a most interesting thing, so interesting and important that every time a member of our profession attends any patient between the ages of fourteen and twenty-five he has placed upon him the responsibility of determining whether the rapid, palpitating or tumultuous heart action which he is almost sure to encounter is physiological or whether it is hooked up with a valvular lesion or some other organic disease.

Those of us who had placed upon us the duty of making the physical examinations of the boys who went to the World War, know how it came to us in almost every case to consider the rapid, palpitating or tumultuous heart and then to determine whether such was the almost universal phenomena of adolescence and hence physiological, or whether such symptoms were a part of some organic change and therefore pathological. In the same class with the symptoms just mentioned may be placed the accidental, haemic, or functional heart murmurs frequently met with in anaemia, and chlorosis, in Graves' Disease, and in many of the infectious fevers, murmurs, which, though not strictly physiological at the same time are not indicative of any organic change in the heart muscle or valves.

Then there is the intermittent pulse, which, though unaccompanied by any organic change, cannot be said even then to

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be strictly physiological, yet is of little import so far as being serious is concerned. In short, the pulse which intermits four, five or six times in a minute in a person past forty years, when there are no murmurs, no oedema or cyanosis, with apex in normal location may be ignored.

The practitioner who has a clear conception of these innocent irregularities of the circulatory system so common in childhood and adolescence and can, with fair accuracy distinguish between the harmless murmur and the murmur significant of grave pathology and can rate at its true value the intermittent pulse has at least attained one important goal.

Whenever there is any considerable disturbance anywhere in the circulatory system, symptoms are sure to arise which will sound some kind of an alarm, and, when the central organ in the circulatory system, the heart, stops, then and there is death. These being the facts, what is more important than, that every one who practices the healing art should at the very outset of his career adopt the policy of carefully auscultating and otherwise examining the heart of every patient. The physician, who throughout his lifetime adheres to the practice of systematically examining the heart of the woman in confinement, the baby with the earache, the patient with the fracture, the tramp with the itch, or the individual with any other ailment that flesh is heir to will find himself working in a most fascinating field; will have hit upon the only method of rendering himself adept in recognizing pathology in this realm and will thereby greatly enhance the value of his services to those who seek his skill.

If Sherlock Holmes had been a real character, and all his cases real cases, then certainly Sherlock should have been the happiest of men. His method of taking the most trivial clue or symptom, and, from that clue building up his case until he had it all figured out to an exact certainty, must have been for him a most fascinating business, but no more fascinating than the work of the humblest member of our profession can be, provided that practitioner shall adopt the methods employed by Sir Sherlock and untiringly carry them out. To be sure not many of us in our professional work can become Sherlock Holmeses, not being endowed with his masterful acumen, but we all can adopt his methods, and, so far as within us lies, strive to emulate them. Certainly the prac-

titioner who would get very far in the circulatory field and make it interesting to himself as well as worth while to his patients must, to the fullest of his capacity become a veritable Sherlock Holmes.

Such a practitioner takes a heart murmur; that murmur is soft and blowing, it is superficial in sound, corresponds with the systole, is not transmitted to the left axilla, changes with the change of position of the patient, second sound of heart is not accentuated, apex of heart is in normal position in the fifth inter-space, and one inch inside the left nipple line; there is no dyspnoea or cyanosis after exercise. Well, what of it? Why, simply this, that murmur is functional and is of no worthwhile significance unless associated with Graves' Disease or some other perfectly apparent pathological condition.

The same practitioner takes a murmur in another patient. That murmur is blowing, corresponds with the systole, is heard loudest at the apex, is transmitted to the left axilla, second sound of heart as heard at the base is accentuated; there is slight dyspnoea and cyanosis after exercise, the apex is in normal location. The patient is young, or at least below middle life. Well, what of this murmur? It is organic, it means leakage at the mitral valve. What is to be done? If the patient's general condition is good no medicines should be ordered, certainly not digitalis. This patient should be told that he has a mitral leakage; that people with such a defect almost never die suddenly, but with care may easily live to a ripe old age; that by "care" is meant that he should never run, or engage in any other vigorous exercise; that such strenuous exertion will overfill the heart chambers, thus pulling a little farther apart the margins of the heart valves, which are already leaking; that such, therefore might make his condition infinitely worse and bring on serious symptoms.

In a case like this no note of warning need be sounded to the patient, nor to his relatives, save this warning against vigorous exercise, but, in the entire medical field there is no one thing more important than to stress this point; in fact with such a patient as this the warning against vigorous exercise should be fairly shouted into his ears and the ears of his parents, if the patient is a minor. If the patient with the heart lesion like this will heed the warnings and always desist from vigorous exercise he may live to the age of 65 or 70 years, while the engaging in strenu-

ous over exertion will most certainly farther intensify his mitral leakage and terminate his life before the age of 45 or 50, possibly much earlier.

Let this practitioner take a murmur in another case. This murmur is heard loudest over the base of the heart at the junction of the second rib with the sternum, it is blowing in character, is diastolic in time. If it is of some years' standing the systolic blood pressure is fifteen or twenty points above normal; the heart apex is pounding vigorously against the chest wall and there may be a little albumin in the urine. What about this murmur? It means leakage at the aortic valve and is the most serious of all heart lesions, as its possessor is in danger of sudden death at any time. What is to be done? If general health is good no medicine need be ordered, but this is the case in which over exercise is to be forbidden with all the emphasis possible.

Here are our vital statistics telling us that more people die from heart disease than from any other one cause, and, when we analyze the thing but one conclusion can be reached, viz., that our schools and homes are fairly teeming with children and young people, who, though apparently in perfect health, harbor within their chests serious valvular heart defects. Many of these defects are congenital, many are the unavoidable results of diphtheria, scarlatina and other infectious fevers, while all too many have had their origin in focal infections from the teeth and tonsils with the resultant so-called rheumatism and endocarditis; but whatever their etiology these defects prevail to an alarming extent.

Since July, 1919, we have had on our statute books one of the finest laws ever passed in the history of our state, viz., the law requiring that every child in our public schools shall be inspected during the first month of the school year to determine defects of the eye, the ear, the nose and the teeth. While this is a most blessed law, there is probably today no more pressing need than that every state should have a law requiring all school children and young people to have a physical examination once a year by competent internists to determine valvular heart defects. Since we have no such law in this state would it not be well that we physicians should, at every opportunity possible, carefully auscultate the hearts of the children in the families of our patrons, and, then, where needed, give

the necessary warning against over exertion, thus very materially alleviating suffering while adding to the longevity of the human race.

So far we have been taking central symptoms and from them working to conclusions; let us now take a few peripheral symptoms and from them work to conclusions. A patient walks into the physician's office, he is past forty years of age, he has a hurried catchy respiration with cough; his ears and lips are slightly bluish. With the symptoms mentioned, which are caught at first glance, a fairly accurate conclusion can be drawn, but upon examination the ankles will probably be found to pit on pressure; there may be a trace of albumin in the urine; there is a history of insomnia, or at least poor sleep with distressing dreams; he will probably complain of pain in the hepatic and epigastric regions, and, when questioned will admit that he occasionally coughs up bloody sputa, and often has to sit up in bed at night to get his breath. With the stethoscope rales will be found in the lungs and a blowing murmur, systolic in time is heard loudest at the heart apex, which, because of the dilated heart, will be found directly below or outside the left nipple line; this blowing murmur is heard in the left axilla and at angle of left scapula; the second sound of heart is decidedly accentuated; the liver border will probably be found an inch or two below margins of ribs because of enlargement.

This is a fairly good picture of that most common of all heart lesions—a mitral leakage with lost compensation and its resultant pathology, engorgement and oedema of ankles, kidneys, lungs and liver, and affords one of the richest fields in the whole range of medicine for the exhibition of skill on the part of the attending physician. If this patient is sent home, put absolutely to bed, placed on digitalis, potassium iodide and saline cathartics in suitable quantities, with proper instructions as to diet and liquid intake the results will be highly satisfactory. In two or three weeks the dyspnoea and cyanosis will have vanished; the oedema of ankles will have disappeared; because of having been relieved of its engorgement the liver will have crawled back up under the ribs where it belongs; the kidneys will be functioning properly with an albumin free urine; the patient with a fine appetite, flat on his back in bed will be sleeping like a baby and fairly shouting the praises of his attending physician.

Osler once said there is no better test of a practitioner's knowledge of the principles of internal medicine than the skill he exhibits in the use of digitalis. Digitalis is just about the greatest of all the therapeutic agents at our command, and, certainly, just here is the place where, when properly used, brilliant results may be expected.

Of course, this patient cannot be cured, but with proper management his existence can be made fairly comfortable and his life prolonged ten or fifteen years, during which time, with care as to over exertion, he may apply himself to his usual occupation and be a useful member of society. To be sure, sooner or later compensation will again be lost with the resultant symptoms, dyspnoea, cyanosis and engorgement of the lungs and other internal organs; but he can be put through many such storms before that final storm, which will most surely come, when all efforts will be futile.

The physician may be called to the patient who complains only of insomnia, when an examination will reveal the existence of most of the other symptoms just mentioned, the entire trouble being a mitral or an aortic leakage. Again he may be called to a patient who is maniacal with all the symptoms of insanity, the whole trouble being a mitral or an aortic lesion. Another patient loudly stresses the point that he has pain in the region of the stomach and liver, when the entire trouble is a mitral or an aortic insufficiency which has caused the liver, spleen and pancreas to become painfully engorged and necessarily enlarged.

Briefly, then, the four murmurs mentioned—the functional murmur; that of mitral insufficiency with good compensation; mitral insufficiency with lost compensation; and that of aortic insufficiency constitute a very large percentage of all heart lesions. If to these four groups there be added that quite large group of people past sixty years of age whose coronary arteries have become insufficient, and, who, therefore, suffer from pectoral angina upon moderate exercise certainly a very large field will be covered. Truly a large volume would be required to discuss the intricacies of this field. Then, if one should wish to take as his text that very wise saying of a member of our profession, "A man is just as old as his arteries" and thus go into the realms of hypotension and hypertension, still more volumes would be required, but it

should be remembered that the title of this paper is just "A Few Facts About the Circulatory System."

In conclusion: If a little digression can be pardoned, this paper will close with a few general remarks. Surely great pleasure must come to those who honestly and earnestly work in any of the numerous scientific fields, but certainly no greater pleasure can come to any group of workers than can come to those of the medical profession, who choose to honestly and earnestly seek for the truth and who will be satisfied with nothing but the truth—the absolute truth.

There are those who practice the healing art such as the chiropractors, the osteopaths, and the Christian scientists, who never have had the opportunity through a regular medical course to look into the wonderful beauties of scientific medicine and thus compare the truth with the untruth, and, who, therefore, probably practice their cult with honest hearts. For such, therefore, the regular medical profession may justly hold a large measure of commiseration. Yes, commiseration is the term which can best describe the feeling the regular medical profession should entertain toward the chiropractor, the osteopath and others of that class. But surely the genius has not yet been born who can coin a term which can adequately portray the true color of the soul, and the exact dimensions of the mental caliber of that member of the medical profession, who, having had the opportunity to study the truth, to learn the truth, to practice the truth, to love the truth, yet will adopt as a part of his armamentarium that very acme of all the unspeakable things—the Abrams method of diagnosis and treatment.

THE TECHNIQUE OF VERSION

Prof. Opitz (Frauenklinik, Freiburg) instructs his student as follows:

The breech is sought out with the outer hand, while the inner hand is immediately pushed, with closed fingers, against the outer hand as far as the breech. From this point only should the thigh be palpated down to the foot, which is then grasped and drawn down. It is a matter of indifference if it be the upper or lower (in transverse presentation), or the front or back (in cranial presentation). By this method, the possibility of grasping an arm may be avoided with certainty.

DISTURBANCES OF GASTRIC FUNCTION

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The object of this paper is merely to recall the simple conditions associated with disturbances of gastric secretion and gastric motility. It is a good thing to return at times to the simple ground-work of physiology.

The difficulties in the diagnosis of the cause of pain in the abdomen, particularly of pain in the right side of the abdomen, have been innumerable. Volumes have been written upon this subject. Even during the recent meeting of the American Medical Association at San Francisco, almost another volume was added to the question of the diagnosis of pain in the right abdomen. Three papers on this subject by men of national repute were read and discussed during one afternoon session. The discussion that followed the reading of these papers was the most prolonged and enlivened of any discussion that it was my privilege to hear during any of the sessions attended. At no time in the discussion was there an attempt to explain right-sided pain by the simple, well known disturbances of gastric function.

It is worthy of remark that in that discussion the fact was brought out that the attempts to relieve right-sided pain by the removal of a so-called chronic appendix, were failures in over fifty per cent of the cases. I recall a remark by one of our former Nebraska boys, Dr. A. W. Adson, now a member of Mayo Clinic, made while in Lincoln a year ago. He was alluding to the fairly prevalent opinion that operations upon tumors of the spinal cord resulted fruitlessly in a large majority of cases. His comment was that the failures to get relief from the symptoms complained of by removing a tumor of the spinal cord were far less than the failures to relieve right abdominal pain by removal of the appendix. Dr. John M. Bell, of St. Joseph, Missouri, made a statement in a paper recently read at Omaha, to the effect that pain in the right abdomen was due in a large per cent of cases to disturbed physiology rather than to a marked pathological condition. In the Journal of the American Medical Association, Dr. J. M. Blackford reviewed a study of gastric complaints in a series of one thousand cases. Fourteen per cent of these cases had organic gastric disease. Thirty-four per cent had abdom-

inal extra gastric disease. **Twenty-five per cent had no objective pathology, the complaints being secondary to habits of living, types of individual, or to chronic debility.** One-third of all cases operated upon fell into the functional group. So by way of repetition, in explaining the innumerable abdominal pains and gas accumulations within the abdomen, let us not leave out the etiological role played by the simple conditions of disfunction of gastric physiology.

There is another large group of cases that constantly invade our offices and who constantly try our patience. This is the so-called class of "neuroses," or "neurotics," or "neuros." There is a constant effort to limit the number in this class. This is an attempt surely well directed. Every conscientious clinician feels somewhat conscience-stricken in making a diagnosis of "neurosis." The diagnosis, neurosis, is a sort of by-path which we often take when we are more or less blinded by ignorance. The consideration of the simple disturbances of gastric function will, in my estimation, help very materially in diminishing the number of cases commonly looked upon as neurotics and psychics.

The disturbances of gastric function which this short thesis attempts to present will be the two most common, namely, disturbed secretion and disturbed motility. These will again be subdivided, the first into achlohydria and hyperchlohydria, and the second into atonicity and hypertonicity. Rather than to tire you by an attempt to formulate a group of symptoms characteristic of each one of these conditions, I believe that a better idea can be obtained if a case representing each condition be cited in brief.

Before reviewing these cases let us reiterate the problem which we are attempting, at least in part, to clarify. There are on the one hand two conditions which are very common and which are often very difficult to explain. These two conditions are, first chronic pain in the abdomen, particularly in the right abdomen, and second, so-called neuroses. There are on the other hand simple conditions of disturbed gastric function which are often overlooked, and which in a fair per cent of cases will explain the abdominal pain or the neuroses.

The cases herein reviewed are cases in

*The original paper reported two cases illustrative of each condition.

which there are no known demonstrable pathological lesions of any organ or tissue. Again, practically all of these cases have been under observation for a fairly long period of time.

The case reports have been abbreviated and skeletonized.

CASE OF ACHLORHYDRIA

Case No. A-2052. Mrs. S., age 41, female, married.

Personal history: Four children, living and well. Three miscarriages between the first and second child.

Previous diseases: Diphtheria at 12 years. Post-partum infection twelve years ago.

Present symptoms:

1. For three years has complained of stomach trouble which consists of (a) accumulation of gas above the umbilicus. Much of the gas is eructated. (b) General distress in the upper abdomen coming on particularly at the time of gas accumulation. (c) Distinct sharp pain also in the epigastrium. This pain is markedly increased if she bends forward. It often lasts an hour or two.

2. Loss of weight, from 126 pounds to 115, in eight months.

3. Has a redness of the skin which sometimes takes on the form of a light eruption. The itching is marked.

4. There are general nervous symptoms, as irritability, easily frightened, easily excited, feeling of tension, etc.

Physical examination: Blood pressure 114-70. There was mild laceration of the perineum. No other physical abnormalities were found.

Laboratory findings: In three analyses there was no hydrochloric acid present in the stomach contents.

The pain in this case is very indefinite. It would be difficult to explain were it not for the finding of the achlorhydria. One would have to think of an ulcer, and the matter of chronic appendicitis would surely come up. By looking to the gastric function the symptoms are easily explained and the line of treatment definite.

CASE OF HYPERCHLOHYDRIA.

Case No. A-1667. Mr. M., age 36, male, married. Employed as manager of a local corporation.

Personal history: Smokes four cigars daily.

Previous diseases: Had two attacks of tonsillitis in the twenties, mumps at twenty-four, herpes zoster at twenty-six. Had a pleural (?) trauma at twenty-one while playing football.

Present symptoms:

1. Four years ago he began with a burning or smarting in the stomach. Eating seemed to make it worse. He finally was troubled with such a distress that he was afraid to eat. The burning and smarting continued, occurring two or three hours after eating.

2. Accumulation of gas in the upper abdomen.

3. Pain in the right upper abdomen and to the right of the navel. At times this pain becomes very severe.

4. Marked constipation.

5. Has nervous and psychic manifestations. That is, at times he becomes irritable, avoids meeting his clientele, is very irritable at home, becomes angry very easily, has irritable spats with his wife, acknowledging later that it is his own fault, has some difficulty in sleeping.

6. At times there is slight nausea.

7. Cathartic and enema habit.

Physical examination: Revealed practically nothing. At times there seemed to be a little tenderness at Morris' point.

X-ray examination: No abnormalities revealed. The roentgenoscope revealed some gastric hyper-tonicity.

Laboratory findings: An analysis of the stomach contents showed a large amount of gastric contents with a high per cent of combined and free hydrochloric acid. The hyperacidity and hypersecretion was the only thing definite that could be found.

This patient later spent ten days in a Chicago hospital under the observation of Dr. Sippy. He found no ulcer, no appendicitis, no gall bladder affair. The diagnosis was hyperchlohydria and resulting constipation.

I have had this patient under observation for the last seven years. He has never developed anything definite other than the two conditions mentioned above. Under alkalies and a diet that will control his hyperchlohydria and his constipation, he has no abdominal difficulties.

Surely a case of this type, where one is worried over just what the abdominal condition might be, is a strong reminder of the fact that the old symptoms of abdominal pain and abdominal gas and nervous phenomena, can often be explained upon the most simple conditions of disturbed gastric function.

CASE ILLUSTRATIVE OF ATONICITY.

Case No. A-3662. Mrs. B., age 26, female, married, Bohemian.

Family history: Father died at 69 of pneumonia.

Personal history: Her menstrual history is practically negative. Has been married six years, during which time there have been no pregnancies.

Previous diseases: No scarlet fever, no diphtheria, smallpox at twelve, influenza six months previous to writing this history.

Present symptoms:

1. Choking in the throat, first noticed one year ago. Has been worse since influenza, occurring every day, some days worse than others.

2. Backache in small of back. Worse after having been on feet and worse after her menstrual time.

3. Palpitation of heart with some shortness of breath.

4. Stomach trouble. This came on principally since the influenza, which occurred six months ago, although she has had some stomach trouble for years. The stomach trouble consists principally of (a) burning in the stomach, which is made worse by eating; (b) a soreness over the stomach, that is, tenderness to touch in the epigastrium; (c) nausea, which comes after almost every meal.

5. Insomnia, fairly well marked.

6. Has many indefinite nervous symptoms which she has difficulty in explaining. Some of these nervous symptoms are that she worries, is easily

startled by any sudden noise, has a nervous feeling in her abdomen as if her stomach was drawing up, has many annoying dreams, is often more or less shaky over the entire body, and is conscious of her heart beating rapidly.

Physical examination: Temperature 99. Pulse 100. Blood pressure 116-90. She was distinctly underweight. There were signs of diminished air in the right apex. This was not marked. There were practically no other physical abnormalities.

This patient was under observation for six years, and is still under observation. At times in the beginning of her treatment she had a mild, secondary anemia. The urine was always negative. The blood was analyzed for syphilis, tuberculosis fixation was also made. An X-ray of the gastro-intestinal tract demonstrated a marked gastropnoxis. In reviewing the case after having it under observation for a number of years, there has been nothing other than the gastropnoxis that we could definitely put our finger on. Under the care of this condition this patient gradually began to take on a very different aspect of life. She gained in weight, she became less nervous, had practically no stomach difficulty, there was practically no pain or gas, and about eighteen months after the beginning of her treatment she became pregnant, after a sterility of seven years.

Here is another case in which the symptoms of right-side abdominal pain are surely explained, and also a characteristic of the type of case which we are inclined to classify under the term of neurotics. While this patient continues to have some of the eccentricities that are characteristic of Bohemian women, yet her symptoms are vastly improved and she is one of the most grateful patients, as well as one of the most influential in my behalf of any patient I ever had.

CASE ILLUSTRATIVE OF HYPERTONICITY.

Case No. A-6768. Mr. F., age 59, married, occupation, banker.

Personal history: Smokes from three to four cigars daily. Fifteen years ago was in the habit of taking a drink of whisky three or four times a week.

Previous diseases: No scarlet fever. No diphtheria. Influenza very light during the epidemic. Eighteen years ago was examined by Dr. Frank Billings, of Chicago, who diagnosed a slight hepatitis. Ten years ago, in cooperation with Dr. Mitchell, of Lincoln, Nebraska, I examined this patient and could come to no conclusions as regards any pathology. He has been troubled off and on with stomach difficulties all these eighteen or twenty years. On only one occasion has he had a semblance of an attack when he was on a vacation. He expressed the opinion voluntarily that he thought a nervous strain would produce an attack. Two years ago he visited the Mayo Clinic, where no pathology was found.

Present Symptoms:

1. Stomach trouble: (a) Pain off and on for years in the anterior abdomen, above the navel and to the right of the mid-line. It is dull in character, comes any time of the day and irrespective of eating. Eating does not relieve the pain, but in a general way makes him feel better for a time. He is not hungry when the pain is on. (b) Feels a

soreness in his mouth, particularly when the pain is on. (c) Some accumulation of gas with very little belching.

2. Is very nervous, that is, is fidgety, restless, gets out of his seat and walks around, is irritable, easily annoyed, easily startled.

3. Headache once a week.

4. Of late there is a little shortness of breath, but he walks five or six miles a day.

5. Is somewhat wobbly when he walks, says that it is not weakness.

Physical findings: Negative.

Laboratory findings: Gastric analysis showed a very large secretion of acid. However, the free hydrochloric acid rose only to 50, which one could not call abnormal.

X-ray findings: Stomach normal in size. It was a very acute fishhook in shape, tonic and peristaltic waves were of average size and frequency. There was no tenderness over the gastric region and no other abnormalities except the beaded appearance remained in the appendix for five days. The appendix was never tender.

This analysis was made three years ago. At that time I was inclined to think that this man's appendix should come out. I have since changed my mind. I think this patient has nothing more than a hyperactivity of both secretion and motor action, particularly the latter. These attacks of pain and accumulation of gas with some general depression are practically all caused by influences which come from outside of the body, and which react rather intensely upon an excitable, nervous mechanism. The conditions that made his pain and stomach symptoms worse at the time he came to me in 1920 are the following: You will remember that was the time when banks were having a hard time handling their financial condition. This patient was second ranking official in this bank. The president of the bank, owing to increased responsibilities, broke down from an old nervous affection, namely myasthenia gravis. The president being obliged to leave the bank, the responsibilities of this patient were very much multiplied. As a consequence, his old symptoms not only returned but they were markedly increased. Later on, when business conditions were better adjusted, this patient took a trip to California and his symptoms were practically all relieved. Of course, they return off and on, but not to the same degree of intensity.

This patient has been under my observation off and on for eighteen or twenty years. In the meantime he has been examined by a number of Lincoln men, he has been examined by Dr. Frank Billings, of Chicago, he has been examined at the Mayo Clinic. In no case has anybody found any pathology unless the beaded appendix could be called such. He has had no operations, no intensive treatment of any kind. Even had we all made a mistake in not being able to find pathology, it would certainly seem that in the course of twenty years, had absolute pathology been the cause of his symptoms, such pathology would be easily demonstrable at this time.

The above cases illustrate four conditions which have been well known for years, which are simple, which are uncomplicated

and which are easily understood. These conditions harbor no great problems of diagnosis. They represent a high percentage of the etiological factors which are responsible for the production of the two most common abnormal symptoms, namely pain and the feeling of gas accumulation. In these cases the symptoms of pain and gas existed independently of any of the so-called major lesions, called major mostly because they are surgical, namely cancer, ulcer, appendicitis, gall bladder disease, acute kidney, acute pancreas, etc., etc., ad infinitum. Let us be a little more careful in looking for the cause of pain and gas in the abdomen, in that we look for more simple conditions. Let us not always turn our eyes toward those great, obscure mountains of pathology around

which we are so wont to play when dabbling in medical literature, but occasionally look to the quiet meadows where the rivers of etiological facts often flow openly and yet too often flow unobserved.

The above cases are not to be classed in that large class of cases which are commonly denominated "neuros." A neuropath or a psychopath is a patient who has certain symptoms attendant with no known pathology or known disturbed physiology. The symptoms in the above cases are often accompanied by marked nervous conditions. However, the symptoms in these cases are not the result of mental or psychic disturbances, but are the result of known, demonstrable abnormalities of function.

COMPENSIBLE INJURIES UNDER THE WORKMEN'S COMPENSATION ACT*

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INTRODUCTION

The Workmens' Compensation Act may be defined as a statute providing for payment in case of injury to an employee, or to his dependents, in case of death through injury, an amount determined in accordance with a fixed system or schedule, such payment being in substitution for all other remedies, if any, existing to the employee against the employer. The compensation acts are based on a new theory distinct from the old theory of damages, the underlying thought of which is one of insurance. The compensation awarded is intended neither as a charity to the employee nor as a penalty against the employer. The old theories of law regulating the right of an employee to recover against his employer for personal injuries grew out of conditions surrounding the small industry. The common law refused any recovery except in cases where the employer was shown to be negligent, and negligence being shown, there were three common law defenses:

(1) Contributory negligence on the part of the employee. (2) Negligence on the part of a fellow servant and (3) the doctrine of assumed risk.

With large industries, under modern industrial conditions, requiring an army of employees and the use of complex and intricate

machinery and appliances, these three defenses often resulted in very apparent injustice. The public conscience came to recognize that by far the larger part of injuries in industry resulted from inevitable accident, or from accidents of the business for which no one in particular could be said to be responsible. In other words, the element of negligence underlying the common law recovery ceased to be applicable to the new conditions and an attempted application of the old common law defenses produced social injustice. The new doctrine underlying the compensation acts is that the economic loss from industrial accident should be borne by the industry.

Bearing this in mind, it is evident that any one called upon to participate in the application of these new rules and working out of social justice on this new basis must bear in mind that he cannot become partisan without endangering this social experiment and undermining the structure.

While the compensation acts were originally designed to cover disability resulting from accident, the line to be drawn between accident and disease is a blurred line which cannot be fixed in general terms, but which must be gradually determined by reference to the facts in specific cases. A study of adjudicated cases clearly discloses that the courts, step by step, are including within the

*Address given before the students of the Medical Department, Creighton University, January 30, 1924.

compensation acts disabilities resulting, not from accidental injury in the ordinary sense of that term, having relation to external force primarily, but cases in which disease is the principal operating factor where the disease is the result of the particular employment, in other words, what may be termed occupational disease. It is probable that an effort will be made to more clearly define this field by amendment to compensation acts, but until such amendments are made, one of the difficult problems for the medical man is to bear in mind the relationship of cause and effect in the given case and to distinguish between disease in the ordinary case and occupational disease.

There are also a large number of cases where accident and disease are contributing factors in the disability. A partisan is apt to over-estimate or under-estimate the relative importance of the contributing factors thereby producing instability in the administration of the compensation acts.

COMPENSIBLE INJURIES

A compensible injury is the result of force, directly or indirectly applied and sufficient to produce a recognizable disturbance of physical or mental function, with or without visible change in bodily contour.

Function embraces push, pull, grasp, locomotion, support, equilibrium, protection, nutrition, secretion, excretion, volition and the special senses. Disturbance of function may produce an initial disability or an aggravation of a preexisting disability or disease. The result may be immediate or remote. An immediate or potential disability partial or total in degree and temporary or permanent in character depends upon the cause, age, sex, general health, and when dealing with compensible injuries, the earning power of the individual at the time it occurred. Every case warrants a careful examination and record of the findings, for in no other way is the physician able to arrive at a reasonably accurate determination of the disability, the probable duration of it and the final results. Failure to observe this is a cause of needless expense to all parties concerned. Often cases are reported as temporary, total or partial disabilities, which subsequently prove to be permanent, total or partial, which leads to distrust, confusion and often legal complications. It is a problem dealing in facts. Personalities, financial returns to the employer, the employee or the physician must be submerged and the

determination made upon the application of the law and an accurate measurement of the loss of physical or mental function as applied to the individual's occupation or its equivalent.

It has been my privilege the past six years to treat and examine a large number of war and civil injuries. I have seen the ultimate results in a fairly large number that were previously treated by recognized surgeons of Europe and America. It requires careful study and good judgment to arrive at an equitable determination of the degree of disability, remedial surgical measures applicable, and the probable final results, in some cases. Knowledge gained by close application and clinical observation together with integrity, are prime requisites, for every injury is a law unto itself. The prevention of accidental injuries offers the same relative possibilities as the prevention of infectious disease and metabolic disturbances. The injury having occurred, it requires treatment, and, in many instances discretion on the part of the attending physician would be the better part of valor. The physician who is not dealing considerably with bone, joint, vertebral, spinal cord, brain and nerve injuries, will be well rewarded by recognizing his limitations. Failure to do so may prevent the application of remedial measures in time to secure a maximum benefit.

Specially trained men are increasing in all phases of industry, conversations indulged in by superficial observers, to the contrary notwithstanding. The law of adaptation is reflected in the medical profession, and the industrial surgeon is found in cities today where a few years ago he was not anticipated. The same holds true of better qualified physicians in rural communities. The demand has produced them, and I predict that the demand for hospitals, in which to care for the sick and injured in rural communities, will in a very few years produce the Municipal Hospital, paid for as a necessity, and in the same manner as the public school, city hall and fire equipment.

The industrial surgeon plays a dual role. He serves the employer most when he serves the employee best. He should be trained to administer measures that will prevent the loss of a member of society and the burden which such a loss becomes. This implies thorough training in traumatic regional, abdominal, thoracic and cerebro-spinal surgery, well grounded information in rehabilitative

therapy and a recognition of its limitations. A knowledge of the cause and effects of disease and injuries is necessary, for in substantially all cases, such knowledge will be required to determine procedures and to estimate the degree of disabilities.

MEDICAL BENEFITS

The employer or his representative, the insurance company, will make payment to the injured upon the reports submitted by the attending physician. If the physician fails to consider the individual as a whole or fails to grasp the intention of compensation laws, he will surely fail to make an equitable estimate of the injury and the duration of the disability. The courts have given liberal interpretations of the sections prescribing benefits. The Massachusetts Supreme Judicial Court in *re Hurle* 104 N. E. 366 states:

"The preponderance in recent years of actions grounded upon physical violence has tended to emphasize the aspect of injury which depends upon visual contact or direct lesion. But that is by no means the exclusive significance of the word in common speech or in its legal use."

Compensation for a nervous break down of a previously healthy woman worker as a result of the cry "fire" was awarded by the supreme court of New York. *London vs. Casino Waist Company*, Affirmed 181 App. Div. 962 N. Y. Dept. of Labor Special Bulletin No. 97 p. 135. The Massachusetts Supreme Court has held that anything which causes incapacity for work and thereby impairs the ability to earn wages is a personal injury under the workmens' compensation act. In *re Johnson* 104 N. E. 735, Iowa has allowed compensation for "frost bite" in severe weather. *Smith vs. Turner Improvement Company*, Iowa Workmen's Compensation Service 4th Biennial Report p. 103. The Minnesota Supreme Court held that freezing comes suddenly and violently and is, therefore, a personal injury. *State ex rel Virginia & Rainey Lake Company vs. District Court of St. Louis County* 164 N. W. 585. The New York Supreme Court awarded compensation to an employee who froze his hands while floating ice with a pike pole. *Quick vs. Illston Ice Company*, 195 App. Div. 676. The Minnesota Supreme Court awarded compensation to a janitor who froze his toe (and later had an amputation of the leg) when obliged to clear snow from the walk. *State ex rel Nelson vs. District Court Ramsey County*, 164 N. W. 917. *Virginia—Lynch vs. Hampton Roads Construction Co. Va. Industrial Commission*

Opinions Vol. 1. p. 160; Connecticut—Ahren vs. Spier 105 Atlantic 340; *Rhode Island—Walsh vs. River Spinning Co.* 103 Atlantic 1025; *Nebraska—Young vs. Western Furniture Co.* 164 N. W. 712 and *Pennsylvania—Lane vs. Horn & Hordart* 104 Atlantic 615; have awarded claims for "sun stroke." Massachusetts Commission awarded a claimant who had "pneumonia" following a drenching rain together with smoke in foul weather while on duty. In *re McPhee* 109 N. E. 633. Death from pneumonia has been compensated for in New York—*McGrath vs. Winternitz* Affirmed 196 App. Div. 910 Special Bulletin No. 106 p. 204. *Michigan—Tanner vs. Aluminum Casting Co.* 178 N. W. 69. *Mich. and Indiana, Republic Steel and Iron Company vs. Markowicz* 129 N. E. 710 Ind. when the result of a weakened condition, lowered vitality, loss of blood, etc., all of which lessened the chances of recovery. Rheumatic fever has been compensated for by Massachusetts, *Curry vs. Globe Yarn Company Weekly Underwriter Vol. 103 No. 8 p. 843.* Scarlet fever contracted while transporting a patient in an ambulance has been held compensable in California. *Zehender vs. Davis*, California Industrial Accident Commission Decisions Vol. 8 p. 180. Exposure causing "nephritis" has been compensated for in Indiana Supreme Court—*United Paper Board vs. Lewis* 117 N. E. 276. Acute pericarditis with effusion, sero-fibrinous exudate, from a fall was a basis of an award in a New York case. *La Fleur vs. Wood* 164 N. Y. Supp. 910. Many other examples could be cited, but these show the trend of present day thought and actions.

Bone and joint injuries have always afforded opportunities for malpractice suits. *Virginia, Act of 1918 Chap. 400 Sec. 27* and *Georgia Acts of 1920, Chap. 814 Sec. 27* provide that the employer is not liable for damages for malpractice by a physician or surgeon furnished by them, but that the consequence of any such malpractice shall be deemed a part of the resulting injury and shall be compensated for as such. The Supreme Court of Oklahoma held to this doctrine in principle, in a case wherein the employee sustained a fracture and was attended by a physician and the result was a mal-union with four inches shortening. Subsequently the employee was operated upon by another physician to reduce the deformity, mal-union resulted and later the limb was amputated. He sued the employer for malpractice damages. The Supreme Court of Oklahoma held the employer

liable. *Booth & Flinn vs. Cook* 193 Pacific 36. The Wisconsin Law provides that the damages, if any, shall be determined by a jury, but that in the event of a civil action results in a verdict for the employee, the amount of compensation received shall be deducted from the total allowed by the jury verdict. Wisconsin Workmen's Compensation Act. With Amendments 1921. Sec. 2394 25 Par. 3. Washington Supreme Court in passing upon an appeal wherein the employee had accepted an award for injuries, and later brought civil action against the employer alleging malpractice of the physician who attended him, that the malpractice was the result of the original injury, and that no suit could be maintained. *Ross vs. Erickson Construction Co.* 155 Pacific 153.

The Kansas Supreme Court has held that malpractice is not covered by the compensation act. *Ruth vs. Witherspoon—Englar Co.* 157 Pacific 403. The Maine Commission held that when the employee selected his own physician and the physician was negligent in setting a fracture, that the employer was released from responsibility therefrom. *Seavey vs. Hodgdon Bros.* Weekly Underwriter, Vol. 98 No. 20 May 1918. There has been no decision of this question by the Nebraska Supreme Court.

MEDICAL AID

The Nebraska Workmen's Compensation Law 1913, as amended 1917, 1919, 1921, 3661 Sec. 111, covers medical aid. It is plain that hospitalization is contemplated where indicated and that the intent of the law is to supply to the injured modern treatment and every reasonable requisite to aid him, without financial embarrassment.

Thirteen states have inaugurated official schedules of medical fees. These schedules vary in degrees of elasticity. The Nebraska law provides that the Labor Commissioner shall approve the charges. When the present Nebraska Law was made active, there was a wide range of charges for relative services presented to the insurance companies for payment, which caused contention and delay. Mr. Kennedy, then Labor Commissioner, sought to simplify his approval under this section, as an aid to physicians. He solicited the advice of several hundred physicians throughout the state and from this advice and consultation with Omaha and Lincoln surgeons, formulated the schedule of fees now in effect, which is adhered to by most

insurance companies. This schedule does not cover every contingency but does afford a guide for the insurance companies, physicians and Labor Commissioner, for the cases specified therein and also for relative conditions not included in the schedule. The schedule compares favorably with those in effect in eastern and southern states, but does not measure up to those in North and South Dakota, Utah, Idaho, Nevada, Oregon and Washington. However, there is more involved in the question than the doctor's fees. The injured individual does not receive 100% of his lost wages and does not receive any remuneration except his medical care for the first week; the employer loses the services of the injured and the cost of medical services, hospitalization, medicines, legal services, etc., which represent a large outlay of money, and for all costs in the end, the public pays. So taken all in all, and considering the question from a broad view, the schedule complies with the law, in being reasonable and I believe adequate.

TREATMENT

When a physician or surgeon is called upon to treat a traumatic injury he should bear in mind that the most trivial accident may subsequently become a total disability. The patient should be considered as a whole. Thoroughness will prevent mistakes and injustice to the injured, the employer and the medical profession. A maximum physical restoration with a minimum loss of time should be secured. Elimination or modification of preexisting disease, or the correction of a preexisting injury may be required to accomplish this. Prevention of subsequent complications is mandatory. If supplementary treatment is required, the employer, or the insurance company representing him, should be informed and a request made in writing for permission to treat the concomitant disease or injury necessary to restore the individual to the same relative earning capacity as at the time of injury. By tactfulness and the application of professional training the cooperation of the injured party and the employer should be secured. It is probable that in the event such a request is made, the insurance company will require an examination and report by their medical representative. It pays the bill and is entitled to this information. This does not change the condition so far as the patient and attending physician is concerned, provided the request is based upon facts. The Labor Commissioner appears to have the

power, indirectly, to authorize the treatment and hospitalization required to restore or improve the disabled employee in such treatment is reasonable and recommended by the attending physician, to which the injured apparently is required to submit or forfeit his compensation, and for which the employer must pay.

PROFESSIONAL RELATIONAL RESPONSIBILITIES

The law prescribes that the injured individual may select his own physician but in that event the employer is given the right to employ a physician to examine the injured. This is just. While the medical representative has a legal right to examine the injured patient without the consent or knowledge of the attending physician, and frequently this occurs, our ethics should preclude him doing so. Culture is one of the necessary attributes of an educated individual and is a splendid measure of his attainments. The law provides that the injured individual may select, with or without the recommendation of the employer a specially trained physician to remedy a disability if deemed advisable or

necessary, but no well bred physician will make unfavorable comments regarding the knowledge or skill of the physician who previously treated the case.

The relational responsibility of the medical profession to the public is tremendous. The enactment of compensation laws has increased it. The benefit contemplated by these laws depends upon the integrity and efficiency of the medical profession. These acts in some form will remain on the statutes. Their administration may change to meet changed conditions and public opinion, but it is not probable that any change in administration will materially reduce the duties or responsibilities of the medical profession. So far there has been no restriction placed upon personal initiative. Hospitalization has been provided; visits, dressings, medicines and fees, charged in accordance with the schedule approved by the labor commissioner, are not questioned, and, with very few exceptions, are paid promptly. These are advantages for which we should be grateful. Working conditions might have been far different. Possessing such power and advantages, we should be mindful of the trust and account for it by SERVICE.

THE PSYCHOLOGY OF THE TREATMENT OF TUBERCULOSIS*

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The surgeon, in treating the lesions that come before him, carries out the essential procedures with his own hands, and leaves little or nothing to the patient. This is quite the opposite of what is required in treating pulmonary tuberculosis, with the exception of cases directly under the care of trained attendants in an institution. As the vast majority of cases of tuberculosis are not receiving institutional treatment, we depend for the carrying out of essential procedures, directly on the patient himself, and on untrained attendants. None the less, the responsibility lies with the physician; and, therefore, his methods must approach, in a large measure, those of the psychiatrist.

As witnessed by the success of various quack and fake cures in treating this disease, tuberculosis responds quite well to the psychiatric side of the treatment. In fact, the thing that determines whether or not the result of the treatment will be an arrest or a

fatality, is far less the extent and character of the pathology, than the personality of the physician, and the disposition of the patient. A patient with a relatively slight lesion may progress to cavitation and death under management very scientific on the surface of it; another with extensive pulmonary destruction will heal and return to normal efficiency, under very simple methods. Two weeks contact with a patient will usually suffice for a prognosis; and in cases where it becomes evident that my efforts are not going to have the desired effect, I usually insist on institutional treatment. Institutional treatment is also an absolute requirement in far advanced cases.

The physician's tasks, having a psychological bearing, are:

- I. The diagnosis and prognosis
- II. Actual therapeutic methods

Rest

Forced nutrition

Fresh air and sunlight

Stimulation and encouragement

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Meeting complications and incidental symptoms

III. Keeping the patient persistently at his treatment over long periods of time

IV. Keeping a careful check on the patient's progress.

The treatment cannot be successful, unless the diagnosis be so carefully and completely made that there can be no room for doubt in the physician's mind. Except in far advanced cases, the diagnosis is not easy and simple; there are many chances for error, and unless the physician has assured himself by all means at the command of modern science that he is correct, he is going to find himself hesitating and doubting at many stages of his course; and such a mental attitude on his part is inevitably communicated unconsciously to his patient, and interferes with the success of the treatment. A positive attitude can be the result only of dense ignorance, or of very thorough and complete study.

What to tell the patient of the diagnosis, is a tremendously important thing. Concealing the truth from him, aside from the moral injustice of it, is a therapeutic mistake, and does nothing but harm. There may be a few persons so ignorant or mentally deficient, or so wedded to obsolete views of tuberculosis that it may possibly be advisable to avoid the issue by calling it nervous prostration or general debility. Most people, however, are entitled to know the truth, and will do better under treatment when they do. The crux of the whole matter lies in the method of telling them. So important is the method by which the patient is informed of his diagnosis, that his prognosis depends in a large measure upon it.

If you say to a patient who has come in with a minor ailment, bluntly: "You have tuberculosis!" he may not believe you. He can always find him some doctor a generation behind in his views, who will touch him with a stethoscope, examine his sputum, and tell him there is nothing wrong with him. Or, he may take it seriously and fly off in a panic to Colorado or Nevada, and perhaps die there because he cannot afford to live there.

The patient must be told in such a way that he gets an adequate idea of the seriousness of the disease and the necessity of taking the proper care of himself; yet at the same time he must be given to understand that his prog-

nosis is good, and that whether his disease is to be cured, or become serious or even fatal, depends on his own efforts. His fate is in his own hands.

It is wise, then, to give him a general idea of the disease; to explain the universal distribution of the tubercle bacillus, and the fact that sooner or later everyone of us gets it into his body. Whether or not the disease gets well or overcomes the patient, depends on the latter's resistance. The question of infectiousness to others will worry most patients at this stage; explain to them that infectiousness depends on the sputum, of which there is none in the great majority of cases on which a timely diagnosis is made. It is well to explain the pathology in popular terms, comparing the infiltration to commonly understood swellings, and explaining the difference between this and advanced tuberculosis or "consumption."

In treating tuberculosis, the doctor's task goes far beyond outlining what the patient should do, and telling him: "If you don't do what I tell you, how can you expect me to help you?" That the patient will not follow directions, is no excuse for the doctor. The patient comes to the doctor to get well; he comes with a disease of which discouragement, skepticism, and disinclination to carry out treatment, seem to be prominent characteristics; it is the doctor's duty to get him well in spite of his lack of ability to cooperate or of interest in his own condition. In a few cases, nothing can be done for the patient except in an institution; in many cases treatment is difficult because of the persistence of the same conditions that determined the disease in the first place—too busy; unfortunate business or domestic situation; financial difficulties. The doctor must be a teacher, a friend, a confessor, a tyrant; and he must have everlasting patience and persistence. With proper methods, the number of cases that can be cured in spite of themselves, can be vastly increased.

The actual treatment consists almost altogether of things done by the patient himself, under the doctor's instructions. These instructions must, therefore, be clear, and permanently available to the patient for repeated reference. Nothing but instructions in writing will fulfill these requirements. It is wise to retain a carbon-copy for yourself, and to let the patient see that you are keeping it. Instructions must also be specific;

general statements like: "drink lots of milk" and "rest all you can" are worse than useless. Put down how many hours out of the 24 the patient is to rest; what do you mean by rest; what is to be eaten, how much, and when. Plan the patient's entire day for him, and write down what he is to do with every minute, with detailed specifications as to quantity and time, for everything. It is impossible to follow general directions; it is easy enough to stick to a detailed schedule.

The success of the treatment depends entirely on the patient's cooperation, and the physician's main efforts must be directed toward securing this cooperation. In general, patients will not follow directions blindly. Unless you make them understand the principles underlying your efforts, and the reasons for the things you want them to do, most people will persist only a short time, and many will not even begin. Unless you make your methods look at least as plausible as the chiropractor's little story, or the claims of some wonderful specific consumption cure, the average patient will prefer the more interesting procedure. The rational treatment of tuberculosis is a prosaic thing at best; and people are looking for something wonderful.

I shall give a few examples of what is necessary, though it is quite impossible to cover the ground, as this sort of material takes up too much space. Explain to the patient that he cannot run away from the disease by going to Colorado or California; that climate is the least of his requirements; and that there is no other specific cure, neither climate, nor medicine, nor serum, nor electrical treatment, nor physical manipulation, that will magically cure him. His only hope is in building up his resistance; and his methods must be building-up methods.

When a patient is directed to rest, make him see that the energy he uses for moving is lost for "building-up" purposes. Merely sitting in a chair takes 50% more energy than lying quietly in bed; carrying on a conversation in a sitting position requires double the amount of energy as lying quietly. Make it clear to him that by "building-up" we mean not only adding on weight, flesh and fat, but also the elaboration of immune bodies and biochemical substances necessary to health. These are highly complex structures, and the energy that enters into their composition is more important and greater in amount than the material. Most of the tuberculous pa-

tient's energy is used up in supplying material and energy consumed by the inflammatory and toxic processes; and as the average one does not eat enough to supply energy for even ordinary activity, he is progressively sapping his own tissues. In order to stop the loss and start the gain both of body tissue and immune substances, it is first necessary to stop all non-essential expenditure of energy.

There is a terrible idea popularly prevalent, that when one does not feel well, it is necessary to take much exercise and eat little. It must be impressed on tuberculous patients that they require an enormous amount of food. All the gain in weight, all the material for defense in the internal battle, must go in through the patient's mouth. Most of these cases are not hungry and do not want to eat; explain the reason of this in order to secure their cooperation. The anorexia is partly a toxic symptom. In many cases there is an atony of the abdominal and gastric musculature, and the weight of a little food is distressing. Nine per cent of the energy content of intaken food is required to digest and assimilate it, and this energy must be mobilized before the energy from the ingested food is available. This is a tremendous effort for which the weakened body is disinclined. The condition can only be corrected by adding energy to the body, that is, by eating. Hammer in the fact that there is nothing, no medicine, no tonic, no "treatment", nothing that will add energy or "strength" to the body, except food.

Sometimes it is necessary to give a tonic, because the patient's mind is not satisfied with so commonplace a thing as food. Often, one may secure enough of the desired mystical effect by explaining that the body requires iron, calcium, and phosphorus, to build up the blood, the fibrous or healing tissue, and the nervous system; and that these substances are contained in far more assimilable form in meat, eggs, and milk, than in drugs. Where a person will not follow diet directions blindly, he will have a great zest for his diet when he thinks of the iron, calcium, and phosphorus he is getting.

The fresh air question is fairly well appreciated by the laity. Colorado has no monopoly on fresh air; there is enough of it in the patient's own locality; in New York and Chicago tuberculous patients get all the fresh air they need, and get well without leaving the

metropolitan area. However, this fresh air can no more penetrate skin and bones than it can brick walls. It must reach the patient's tissues through his mouth, lungs, and circulation.

This paper is not the place to discuss which cases require respiratory exercise and which do not; most cases seen in practice do require it, either costal or diaphragmatic, or both. Increased respiratory effort is the main benefit that is secured by sending a patient to a high altitude; the scarcity of oxygen produces a greater movement of the lungs, giving a better ventilation of the alveoli and bronchioles, and an increased blood supply and greater nutrition to the diseased portion. The patient can secure all of this benefit of the high altitude at home, by the exercise of a little conscious effort.

I think one should be cautious about using stimulation, either by means of "tonics" or by other methods. Stimulation accelerates the expenditure of energy, instead of economizing it. Nevertheless, stimulation often has a psychic value that may turn the tide in a difficult case. When a patient takes strychnine or cold baths and feels better, he thinks he is improving and that is half the battle.

I have found a few rare cases in which it is possible to see a patient once, give him a set of instructions, allow him to go home, and have him return in two or three months, much improved. Very few indeed, are able to get everything correctly without assistance. Usually it is necessary to see them weekly, go over their instructions with them item by item, pick out errors and correct them. Also, in many cases, the patients feel no better after a week or two of treatment; many even feel worse. This is because they have been heretofore keeping themselves going at the expenditure of much nervous tension; once they relax, they realize how weak they really were. At this critical time, very careful handling is necessary; when the gain in weight begins, patients do fairly well about returning weekly.

Some persons will comprehend the need for these weekly consultations, even though the physician does nothing but talk to them. Others again do not see what good it does merely to come and talk to the doctor for a few minutes, and be charged a fee for it. Observation has shown me that the cases that come regularly, do well, even though it seems

that nothing is accomplished at the individual sitting; and those that do not come regularly fail to get along. Therefore, in many cases, it is justifiable to resort to some artifice to supply the patient a motive for coming; some sort of "treatment." I dislike very much to present the appearance of performing any hocus pocus; yet I feel it justified, because its main result is the accomplishment of therapeutic results that without it would be impossible. I have tried to use methods for that purpose, which have some scientific foundation to recommend them. Diathermy and actinic light have many enthusiastic supporters, and in some cases, it appears that they show results of their own. Further observation will either confirm or refute this.

Keeping the patient at it, is the big problem; especially when he has progressed so far that he feels good enough to quit. Often he neglects his instructions at this stage, without saying so in his reports. Do not let him get too far; if you keep a careful record of his pulse, temperature, hemoglobin, weight, appetite, etc., you will be able to pick up his dereliction fairly early. The quicker you catch the patient at it, the more it will increase his respect and faithfulness. Then, explain to him that he cannot afford to stop at a slight improvement; his gain will all be lost again shortly, and the effort to bring it back will be more difficult than at first. Set a definite standard of weight, pulse rate, hemoglobin, and temperature to be attained, and of the length of time for which the standard is to be maintained before treatment can be relaxed. Then the patient will know what he is working for, and will be more interested and cooperative.

The long weeks and months or hard, persistent work that most of these cases require, will tax the doctor's utmost resources. Many patients will get discouraged, and go to the chiropractor, to Arizona, or have their tonsils and appendices out, in the hope of a quicker cure. Most folks will persist if they but see results. Results will follow in a high percentage of cases, if your diagnosis is correct. Much perseverance and close application is required on the doctor's part, in looking for obstacles to improvement, complications, laxities on the patient's part, intercurrent illnesses, etc.

In many cases the beginning is difficult; it may be three to six weeks before results appear. Again, the progress is not a steady rise,

but a series of steps. Keep a vivid picture of your aim and object constantly before the patient; make him visualize what he will be like when he gets well; and show him each time a new sign of improvement appears how he is approaching that goal.

When the patient is ready to be discharged, the work is not over. He must be made to realize that he is never really cured. He must beware of debilitating influences which will bring him back down again. Look into his mode of life for these influences that undermine his health, and help him correct them. It would be best for some time, for him to report from once to three times a year.

SUMMARY

The treatment of non-institutional cases of tuberculosis is largely a matter of psychiatry.

The diagnosis must be careful and complete, to insure proper confidence on the physician's part.

The patient must be informed of his diagnosis in a way that will convince him of its seriousness, but at the same time give him hope and courage.

Instructions must be in writing, specific, detailed, and clear.

The patient must understand clearly the reason for everything he must do, in order that he may cooperate properly.

Stimulation, though not best physiologically, has a high psychic value.

The patient's efforts and progress must be constantly supervised.

The most important and difficult thing is to keep the patient at his treatment long enough.

ABDOMINAL TRAUMA*

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It may be well to divide abdominal trauma into two classes: Abdominal contusions, and trauma caused by incised or punctured wounds.

With an incised or punctured wound there is but one course to pursue, namely, immediate surgical attention, the cleansing of the wound, checking of hemorrhage if any be present, and the repair of any organ or hollow viscus which may have been injured.

The cases that puzzle us most and which require the nicest distinction in judgment as to treatment, are cases of contusion. Here is the occasion where a quick decision is necessary to save the patient's life. To operate or not to operate, that is the question.

The patient is found a few minutes after the accident with a pallid face, the surface of the body covered with a cold sweat, respiration shallow and rapid, and pulse feeble. The abdomen, which may or may not present external signs of injury, is almost equally painful over the whole surface.

The patient is in a condition of abdominal shock. Of the nature of the deep lesions, one knows and can know nothing definite at this stage. The force of the injury, its point of application and the nature of the force producing the injury are all to be considered.

We must now consider two conditions—simple abdominal shock, or rupture of a viscus with or without hemorrhage.

Have the patient put to bed with as little disturbance as possible; cut off clothing, keep the head low and apply heat to the whole body. In the Massachusetts General Hospital they have a special shock table heated from the central heating plant and kept at a definite temperature the year around. On this the patient is placed without undressing, is wrapped in blankets and stimulants administered. Hypodermoclysis is administered together with caffeine or camphorated oil. The patient should be watched closely because future action will be decided on what occurs in the initial period.

Immediate laparotomy has been spoken of as a routine procedure in these cases. But if the patient rallies well and quickly, if the character of the pulse and facial expression becomes satisfactory, if there is no distention or increase in abdominal pain and if flatus and normal urine are passed, then we may conclude that there is no indication for operation and the patient will recover with ordinary medical care.

Cases of spontaneous recovery are well known, but to quote them as a guide to all cases is illogical. We know that cases of abdominal contusion without serious visceral in-

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jury do recover but they are the only ones that do so without surgical intervention.

If this intervention is to be undertaken with the best possible chances of success, it must be decided on and carried out within the first few hours. It is necessary, therefore, to lay down the indications of the operation, basing these indications on certain signs which are not, and which ought not to be, the signs of peritonitis. Let us add that the miserable results of late operations, to which by force of circumstances we are often reduced, are of such nature as to make it necessary to add the following corollary to the general rule: In cases of doubt—operate.

If, after one or two hours have elapsed, the pulse remains feeble and rapid, the abdomen is becoming distended and more sensitive to pressure and no flatus or urine are passed, then do not wait for vomiting or these symptoms, but operate at once.

A permanent and progressively increasing weakness and frequency of pulse, a marked pallor and condition of nervous anxiety are indications of hemorrhage and call for surgical intervention.

An injury to the kidney or ureter or to the bladder will cause the presence of blood in the urine.

Last summer I had a case of a boy about twelve years of age who was thrown from a horse going at high speed. There were bruises on the left hip and abdomen and left side of the face. There was frequent urination with the passage of bloody urine and a slight rigidity of the left side of the abdomen with iliac dullness. However, the pulse after the first few hours, became better and while he ran a temperature for a week, all symptoms improved steadily and he made a good recovery.

Progressive distention of the abdomen, hardness and rigidity of the abdominal wall which hardens and defends itself at the slightest touch is an indication of serious trauma and should be taken as an indication for surgical intervention.

If we are fortunate in seeing these cases early, by no means should we wait for indications of infection but by careful analysis of the pulse, temperature, facial expression and condition of the abdominal wall determine what we should do and do it quickly. The benign cases usually show themselves as such after the initial shock has worn off. If there is any doubt, it is always safe to operate.

Unfortunately we often see these cases after undoubted infection is present and very little can be done. I have had two such cases. One was caused by the kick of a horse, the other was an injury sustained by a man who had a double hernia which was held in place by a hard truss with wooden pads or buttons. He was playing baseball and slid head foremost into a base, striking on a pad. Probably a loop of intestine was down in the hernial sac and was caught between the pad and pubic bone. At any rate when I saw him I advised operation, which was refused. Two days later he requested operation and I told him he had one chance in a thousand. He said he would take the chance. I opened him and found a tear in the ileum which was repaired; I also found a diffuse peritonitis. Needless to say he died in a few hours.

It is cases like these that lead us to think that late intervention is all but hopeless. In my opinion, however, the limits of operative indications should be extended as widely as possible; for although the results are very bad, still the occasional unexpected recoveries are sufficient not only to justify but also to enforce this conclusion.

ABSCCESS OF THE LIVER*

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Cases of liver abscess are so uncommon in this part of the world that I have thought the one case I have had might be of sufficient interest to form the basis of a paper at this time.

In the tropics, liver abscess is not an extremely uncommon condition and its etiology is usually traced to the amoeba. So closely is

the amoeba associated with this condition that many text books scarcely mention the possibility of other etiology for single abscesses in liver tissue. So common is this association that the lesion is referred to as single or tropical abscess.

Understanding of the etiology and the surgery of the condition depend greatly on a knowledge of the anatomy. It may be profitable, therefore, to review briefly the anatomy

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of the liver. This great gland, weighing nearly four pounds is situated chiefly in the right hypochondrium, fitting snugly beneath the concave surface of the diaphragm. It is slung in this position by a system of ligaments consisting of peritoneal folds. The broad or falciform ligament is located antero-posteriorly along the fissure between the right and left lobes, binding the liver to the posterior sheath of the rectus and to the under surface of the diaphragm and, incidentally, dividing antero-posteriorly the subdiaphragmatic space into two great compartments—one over each of the great lobes. At the posterior margin, running the entire horizontal extent of the liver, is the coronary ligament, binding the organ to the diaphragm posteriorly. It is formed by the union of two peritoneal folds. Back of the right lobe, these folds do not approximate, leaving a part of the liver surface here not covered by peritoneum. At each extremity of the coronary ligament, a triangular fold extends laterally to the diaphragm forming right and left lateral ligaments. For completeness, only, not for its surgical significance in this connection, we mention the round ligament running to the umbilicus, folded in the free margin of the broad ligament. A summary of the anatomy of these peritoneal folds, is as follows: The liver is suspended in close contact with the diaphragm and between the two are two great pockets lined with peritoneum entirely closed from the general peritoneal cavity posteriorly but open to that cavity anteriorly, each of these pockets situated over one of the great lobes of the liver. These pockets are very deep and nature's process of sealing by peritoneal adhesions enables her to close them very firmly from the general peritoneum.

The circulation of the liver is of such a striking nature that students of anatomy seldom forget its general arrangement. The most impressive feature of this is the great portal system which collects blood from venous radicals throughout the digestive system from stomach to rectum, adds to this the venous blood gathered from spleen, pancreas and gall bladder and carries the whole by way of the portal vein through the transverse fissure of the liver to the interior of that organ to be distributed around the periphery of the lobules in a system of venous capillaries, branches of which find their way to the central vein of the lobule and these to larger

vessels which finally return the blood to the general circulation in the vena cava.

When one contemplates this great sieve straining the blood from the organs so frequently attacked by bacterial infections, one wonders why liver abscess is not more common.

Arterial blood entering the liver by way of the hepatic artery supplies the fibrous tissues of Glisson's capsule, the walls of blood vessels and also, through arterial capillaries, mingles with the blood in the capillaries of the portal circulation. Bile channels from between the cells of the lobules form into ducts and these combine into larger ones, creating finally the hepatic duct which leaves the liver by way of the transverse fissure.

Also passing out through this important fissure are the deep lymphatics from the interior. Lymphatic nodes are found in the fissure and along the common and cystic ducts.

The possible modes of infection of the liver are: (1) Direct injury by puncture or stabs. (2) Extension from adjacent infections. There may be direct extension of pus infection from a suppurative cholecystitis, from an empyema, or from a ruptured duodenal ulcer. In this case the invasion is from the periphery into the interior of the organ. (3) Infection may occur by way of the five sets of vessels entering the liver. Since the current of lymph is outward in the lymphatic channels, invasion could scarcely occur by this route. It may occur, however, by extension along bile channels in a cholangitis and is usually associated with an obstruction of the common duct. In the blood stream infection may reach the liver either by way of the hepatic artery or the portal vein. Infections entering by the former route are usually a part of a general infection or pyemia. Those entering by the latter are from some localized inflammatory process in the territory covered by the primary venous radicles of the portal system. Tiny emboli may enter the blood stream in the inflamed appendix or in a thrombosed hemorrhoid or an amoeba may enter in the dysenteric ulcer in the colon and, of course, must be strained out in the secondary network of venous radicles of the system in the liver. Cases in which the infection enters through the hepatic artery are likely to be multiple abscesses; those originating in the portal system are more frequently single.

My case, that of R. W., age 18, single, farmer, was seen first at the General Hospital with Dr. Triplett, Febr. 3, 1923. The young man seemed very ill. Temperature ranged from 99 to 103, septic in type. Pulse 85. Leucocytes 25,000. Pain very severe at times and felt at McBurney's point. Pressure over any part of the abdomen made pain at this point.

The attack had begun two weeks before with symptoms of a cold, general aching, fever and diarrhoea. Several other members of the family were similarly ill at that time, some with diarrhoea and some without.

Our patient's bowel trouble had persisted up to the time of entrance to the hospital with one intermission of a few days. There was no looseness after entering the hospital. Tenderness at McBurney's point was of two days' duration. No mass could be made out at the point of tenderness. There was no rigidity of the right rectus muscle. Next day after admission tenderness was shifted to the epigastrium. The liver margin could be felt $1\frac{1}{2}$ inches below the right hypochondrium and below the normal line in the epigastrium. Dullness extended on the right side almost to the nipple line. No rales, no friction rub, normal breath sounds in chest. Wiedal test was negative.

X-ray examination of right chest and liver region showed practically no motion of right diaphragm and a high arch on this side, also probable displacement of liver shadow, downward and to the left. Our diagnosis at this time was subdiaphragmatic abscess in right pocket of the space.

Febr. 8, under ether anaesthesia, an incision was made over the right ninth and tenth ribs in the axillary line and about 4 inches excised from each of these two ribs, subperiosteally. The pleura was stitched to the diaphragm and the diaphragm incised. No pus was found in this space, but adhesions were present. By gently separating these over the surface of the liver a mass could be felt on the vault of the liver. The stitching of the pleura to diaphragm was continued and the incision extended between the ninth and tenth ribs. The ribs were separated with retractors and the convex, yellow surface of the abscess, three or four inches in diameter could then be seen on the vault of the right lobe of the liver.

A haemostat was plunged into the abscess and several ounces of creamy yellow pus evacuated. A tube was inserted for drainage. Unfortunately no bacteriological examination of the pus was made.

Recovery was not uneventful. Following the operation a pneumonia developed involving the lower right lobe.

Temperature had barely subsided to normal after this when, because of extreme homesickness, we were compelled to take the young man home to Worms. Temperature began rising again after this and following a blizzard when we had not been able to see him for several days, the right chest was found filled with fluid. A stain of aspirated pus showed only the diplococcus lanceolatus. Continuous suction drainage was used with a small tube inserted through a trocar and this cleared up. The young man is at this time in good health.

It should be added to this history, that the patient's mother has a dysentery, dating from the time of the acute epidemic in the family nine months ago, which has never entirely cleared up. No amoeba have been found in the stools.

Is there a probability that we have dealt here with an amoebic liver abscess? There are several things that speak against such a conclusion.

1. This family has always lived in this locality and has never visited the south.

2. The acuteness of the onset beginning in an illness which was epidemic and only part of those attacked having diarrhoea.

3. The character of the pus—creamy yellow not bloody and ropy.

4. Subsidence of the patient's diarrhoea without treatment.

It seems probable that the bowel condition was bacterial in origin; that during the course of this inflammation a tiny vein became thrombosed; that an infected embolus floated from this into the portal system to be intercepted in the liver.

HEMOPERITONEUM: REPORT OF A CASE*

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It is a well established fact that hemorrhage occurs more frequently from the ovary than from any other abdominal organ. Novak in 1916, and again in 1917, reported several cases of hemoperitoneum occurring from ruptured corpus luteum. More recently there have been similar cases reported, as well as other types of ovarian hemorrhages. Because of the few cases in the literature it has been considered somewhat of a rarity, but that is probably due to their not being reported when encountered, as discussions on

papers, and gynecological meetings would signify.

Novak divided ovarian hematoma into three classes: (1) Follicular; (2) corpus luteum; (3) stromal. He has shown quite conclusively that they are the basic factors for the origin of ovarian hematomata. The case reported in this paper is of the second type.

More recently Sampson has shown that there are certain hematomata occurring in the ovary not originating from these basic factors but that their etiology is outside the ovary. He believes that they are of endome-

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trial origin, that particles of endometrium become implanted on the surface of the ovary, that the ovarian hormone stimulates the endometrium there implanted as it does in the uterus, that a cyst there is formed which continues to grow as the embedded endometrial tissue continues to "menstruate." Whether this epithelial tissue is implanted in the ovary developmentally or in mature life is a question.

It is believed that hemorrhage from the corpus luteum occurs during the stage of hyperemia, when the vessels in the theca are engorged, larger, and more numerous, and form a line between the granulosa and theca. Hemorrhage at this time may be excessive and form a cyst. It may exceed the strength of the cyst wall and rupture into the ovarian substance forming a stromal hemorrhage, or it may rupture through the free wall of the cyst into the peritoneal cavity. That these hemorrhages may be exceedingly dangerous or even fatal is well known. Scanzoni, in 1845, reported a fatal case in a girl eighteen years of age.

REPORT OF CASE.

History: The patient, a girl 13 years of age, was first seen the night of May 12. During the previous night she had been taken with cramplike pains in the lower abdomen, had been nauseated and vomited once. The pains were not markedly severe but persisted through the night and the next forenoon. During the afternoon she felt considerably better. When seen at 10 o'clock that evening she was not complaining. She had had her first menstrual period six and a half months previously, following which she had two more menses at irregular intervals, being about six to eight weeks apart, but of normal duration and unaccompanied by pain. At the time of her illness she was two and a half months past her regular period.

Examination showed a well nourished girl without any appearance of being acutely ill. The mouth and throat showed no pathology, and the heart and chest were negative. Temperature was 99, pulse 75, and respirations normal. The abdomen was not distended. Percussion revealed a slight dullness midway between the symphysis and the umbilicus. Her resistance to examination made it difficult to determine just the amount of abdominal rigidity. She was not tender over the appendiceal region but there was some tenderness over the region of the right ovary but more particularly midway between the symphysis and umbilicus. Since she was apparently in no danger, palliative measures were instituted. The mother phoned the next morning that the girl was much improved, had slept well, had no pain, had a good appetite, etc., and did not think it necessary that I see her again. That evening, however, she again called with the information that the pain had returned, this time more severe in character, and she had vomited two or three times.

A second examination showed the abdomen to be slightly distended. Rigidity was marked. There was a definite note of dullness in the median line just beneath the umbilicus. At this point the patient complained of having cramp-like pains, and there tenderness was most pronounced, although she was somewhat tender right over the ovarian region. Temperature at this time was 100.5, pulse 80, and respirations 24. A diagnosis of appendicitis did not seem warranted. Ectopic pregnancy was considered but abandoned, although the girl was well developed for her age. Operation was advised and accepted.

A right rectus incision was employed. On opening the peritoneum a bloody fluid welled out. The appendix was large and quite congested. The right ovary was low in the pelvis, bound down firmly by adhesions and several times its normal size. A mass was felt in the cul-de-sac. It was carefully freed from its moorings of newly formed adhesions, brought up and through the incision. This proved to be a hemorrhagic sac, the size and shape of a normal kidney. It was attached by a firm pedicle to the right ovary. As the ovary was completely filled with cysts, and about the size of a small hen's egg, it was removed with the mass. Appendectomy was also performed.

Pathologic examination by Dr. M. G. Wohl showed the mass to consist of fibrin, in the meshes of which were seen blood cells. The blood spaces were also seen to be filled with free blood cells. There was a narrow zone of ovarian tissue, scattered through which were round cells and considerable hemorrhage.

The patient made an uneventful recovery and was sent home the tenth day. Since then she has been in good health and has had two menstrual periods.

MEETING OF THE BOARD OF COUNCILORS

Omaha, Jan. 7, 1924.

The annual meeting of the Board of Councilors was held at the University Club, Omaha, January 7, 1924, with the following members present: A. P. Overgaard, H. J. Lehnhoff, C. P. Fordyce, S. A. Preston, H. E. Potter, W. J. Douglas, R. D. Bryson, F. H. McCabe, C. A. Selby and A. J. Stewart. The following were present by invitation: President Morris Nielsen, Secretary R. B. Adams, Editor F. A. Long; the Journal Committee: B. F. Bailey and W. O. Bridges; the Program Committee: K. S. J. Hohlen, John Buis, J. B. Potts and Lucien Stark; the Public Activities Committee: C. A. Roeder, E. L. Bridges and E. W. Rowe; Delegates: R. W. Fouts and A. D. Dunn; Attorney H. A. Bryant and Gene Huse.

After the meeting was called to order by Dr. Nielsen, election of officers was declared to be the first business of the evening. A motion was made by Dr. Bryson that Dr. Potter be elected president of the Council. Motion seconded and carried. Dr. Douglas made a motion that Dr. Overgaard be re-elected secretary. Motion duly seconded and carried.

A letter from Dr. Dillon was read and placed on file.

The following reports for 1923 were then presented:

REPORT OF THE SECRETARY-TREASURER.

The membership of the Nebraska State Medical Association at the end of 1923 was 1194. Compared

to 1922 this shows a loss of nine members. However, due to the fact that more than the usual number of members left the state this year, this is a relative gain.

District meetings were held by all the districts during the latter months of the year. These were all splendid meetings, and have done much to unite the members of the Association more closely together.

The affairs of the Association are all in splendid shape, as will be deemed from the reports of the chairmen of the different committees. The new Committee on Public Activities created at the last annual meeting, has not yet met. This is due to the difficulty in selecting the membership and getting those appointed to accept. This committee will meet in the near future and undoubtedly will get into active work at once.

The annual meeting held at Lincoln in May, due to the program and local committees, was very successful and brought out one of the largest attendances in the history of the Association.

The year ending Dec. 31, 1923, was one of our most prosperous years.

Respectfully submitted,
R. B. Adams.

REPORT OF THE PROGRAM COMMITTEE.

The Program Committee held several meetings during the year and prepared the program which was given at the last meeting. The committee was able to secure Dr. J. B. Herrick of Chicago, Dr. A. E. Hertzler of Kansas City, and Prof. Gardner of the University of Wisconsin as guests of the Association. All were present and helped add to the interest of the meeting.

Respectfully submitted,
R. B. Adams, Chairman.

REPORT OF MEDICO-LEGAL DEFENSE COMMITTEE.

The Medico-Legal Defense Committee submits the following report of its activities for the year ending 1923:

During the period covered by this report twelve new cases have been called to the attention of the Committee. In addition to these cases, we closed last year with seven actions pending, thus evidencing a busy period for us.

In one of the new cases it developed that the doctor had not paid his dues for the year in which the cause of action arose, although he had paid previously and afterward. It was merely an oversight on the doctor's part, but the Committee felt that it would not do to let the defendant in on the Defense Fund, because it might establish a dangerous precedent as to the necessity for payment of dues. Therefore, the Committee took no part, as such in the defense of his case. We may add, though, that the attorney for the Committee was called into the case by the doctor and that the jury brought in a verdict exonerating the defendant.

One other case called to our notice was settled before the institution of any action.

We have, in addition to the above, been concerned in the trial of eight other cases, all of which have resulted favorably to the defendant doctors.

Nine cases are now pending in the Committee's charge.

Respectfully submitted,
R. B. Adams
J. S. Welsh
A. S. von Mansfelde, Chairman.

REPORT OF THE DELEGATES TO THE A. M. A.

The 74th annual session of the American Medical Association was held at San Francisco, June 25-29, 1923.

The meetings were held in the Civic Auditorium, which, on account of its size and arrangement, afforded space for all exhibits in the main auditorium, and large commodious halls for the scientific sections, and rooms for committee work all in the same building. Arrangements in this respect were ideal, and a distinct advantage to those in attendance, enabling them to hear papers in three or four different sections the same forenoon or afternoon without loss of time between meeting places, as has usually been the custom in former years.

About 3650 physicians were registered; the majority of which were from California.

The House of Delegates convened Monday morning, June 25th, and after the addresses of Speaker Dr. Frederick C. Warnshuis, and President Dr. George E. de Schweinitz, and a few remarks by President-elect, Dr. Ray Lyman Wilbur, the speaker announced the reference committees and the regular routine work of committee reports, resolutions, etc., would be taken up.

As all the propositions that were presented and disposed of in various ways would require many pages to report, only a few of the more important ones on which final disposition was made, will be mentioned:

1—That a compilation of the policies of the Associations be made by the secretary and furnished the constituent associations and delegates of the House.

2—The appointment of a special committee to represent the Association in conferences of national welfare.

3—To again inform the Red Cross that the war is over, and there is no need for this organization in the field of medicine or community clinic activities.

4—That the Bulletin of the A. M. A., which is now being mailed to only the officers of the national, state and community societies, be sent all Fellows of the A. M. A.

5—That the conferences of the state secretaries be approved and continued, and that the president and president-elect of the state societies be invited to participate.

6—That the Council on Pharmacy and Chemistry be instructed to employ a trained publicity man, preferably a writer with an established reputation, whose duty it shall be to get into the lay press, daily papers, magazines, etc., articles covering fully and accurately all the activities of organized medicine.

7—The Board of Trustees reported that the former price of \$5.00 for the Journal would soon be restored. It has now gone into effect.

8—A resolution was introduced and approved to extend the term of trustees to five years, with the

proviso that no trustee shall serve more than two consecutive terms. In accordance with the constitution, this was laid on the table for one year and will be disposed of at the next meeting.

9—A move was instituted to abolish the office of delegates from the scientific sections and the army and navy, depriving them of representation in the House of Delegates. This was defeated.

Several resolutions relative to the Volstead Act and the prescribing of liquor by physicians were introduced, which provoked much discussion, but little definite action or promise of relief, further than eleventh hour resolution from the Committee on Rules and Order of Business, and since copies of this resolution are to be mailed to each state and county society, the resolution follows:

"WHEREAS, The honor and integrity of the medical profession is being reflected on by the unnecessary, unprofessional and unlawful prescribing of alcoholic liquors by some unscrupulous physicians.

RESOLVED, That in the judgment of the House of Delegates of the American Medical Association in session assembled, every state and county medical association should use their best endeavors to discipline physicians who either negligently or wilfully prescribe alcoholic liquors otherwise than in accordance with the law, and to purge the medical profession of physicians who, wilfully, under the cloak of their profession, prescribe alcoholic liquors for other than medicinal purposes, and

RESOLVED FURTHER, That the secretary of the Association forward a copy of this resolution to every state and county medical association affiliated with the American Medical Association."

Dr. Wm. Allen Pusey of Chicago was elected president, and Dr. Olin West, who had filled the office of secretary since the death of Dr. Craig in September, 1922, was elected secretary.

Chicago was chosen as the meeting place for 1924.

Respectfully submitted,
R. W. Fouts
A. D. Dunn

REPORT OF THE AUDITING COMMITTEE.

The Auditing Committee, after due investigation, begs leave to report the following financial condition of the Nebraska State Medical Association:

General Fund			
Balance, Jan. 1, 1923.....	\$ 583.88		
Receipts, 1923.....	6,509.86	\$7,093.74	
Disbursements, 1923.....	6,658.92		
Balance, Dec. 31, 1923.....	434.82	\$7,093.74	
Investment		\$4,575.38	
Defense Fund			
Balance, Jan. 1, 1923.....	\$ 886.60		
Receipts, 1923.....	1,204.31	\$2,090.91	
Disbursements, 1923.....	1,554.82		
Balance, Dec. 31, 1923.....	536.09	\$2,090.91	
Investment		\$2,500.00	
Journal Fund			
Balance, Jan. 1, 1923.....	\$1,790.56		
Receipts, 1923.....	7,545.91	\$9,336.47	
Disbursements, 1923.....	6,409.92		

Balance, December 31, 1923.....	2,926.55	\$9,336.47
Investment		\$2,244.25

Respectfully submitted,
W. J. Douglas
C. A. Selby
A. J. Stewart.

A motion was made and seconded that these reports be accepted and published in the Journal. Motion prevailed.

A report from the Committee on Campaign was read and placed on file.

Attorney H. A. Bryant gave a short talk.

A motion was made by Dr. Douglas that a letter be prepared to be sent to each individual member in the state, signed by the Councilors in their respective districts. Motion seconded and carried.

Dr. Bryson made a motion that the sessions of the House of Delegates at the annual meeting of the Association be held at 1:00 P. M. on the first and second days as per the rule followed last year. Motion seconded and carried.

A report of the work of the Public Activities Committee was read by the chairman, Dr. Roeder.

The resignation of Dr. A. J. Stewart was accepted with regrets.

Summary of Councilors' Reports — 1923			
District	Members	Deaths	Expense
1	307	0	
2	140	0	\$ 8.00
3	81	1	30.00
4	94	2	15.80
5	97	3	19.30
6	81	4	23.15
7	73	1	27.25
8	24	0	29.00
9			40.05
10	68	2	49.89
11	26	0	32.76
12	41	0	70.05
Adjournment.			

THE USE OF BASIC DIETS IN THE TREATMENT OF NEPHRITIS

It seems logical to W. D. Sansum, N. R. Blatherwick and Florence H. Smith, Santa Barbara, Calif. (Journal A. M. A., Sept. 15, 1923), in selecting an optimal, arterial hypertension-nephritic diet, to pay especial attention to the acid-base balance of the food selected. At the same time, other fundamental dietary principles should not be neglected. The same types of diet are used by the authors in the treatment of all forms of nephritis, but they relate here their experience with the arterial-hypertension nephritic group. Such patients were not kept in bed, but were permitted their usual activities. They were not starved. An attempt was made to maintain them at as close to their normal weight as possible. They were given no exhaustive hydrotherapy. They were given no vasodilator drugs. Cathartics were not used, since the bulk insured from one to

three natural stools a day. Fluids were not limited. Sodium chlorid was restricted in a few terminal cases when the kidney function was very low. Patients were kept in the hospital from one to two weeks, where a series of palatable, sample meals were served and where they were given careful diet instructions. This hospitalization provided an opportunity for the study of continuous twenty-four-hour specimens of urine to ascertain whether the diets were sufficiently basic. The neutral foods may be used in the amounts desired by the patient, unless otherwise stated. They are: butter, cornstarch, cream, lard, sugar and tapioca. Many of the acid-producing foods should not be used. A few of the less acid ones may be used in specified amounts. In general, all vegetables, nuts, fruits and sweet milk, with the exception of prunes, plums and cranberries, are basic in their final reaction. These may be used in the amounts desired by the patient. The total excess of base over acid is expressed in terms of cubic centimeters of a normal solution. The patient readily understands when he is told that the urine acidity should not be greater than two times that of the body. If the urine is as much as 100 times as acid as the body he easily understands the needs for more basic food.

SUGAR TOLERANCE TESTING

It is recommended by Richard A. Kern and Leon Jonas, Philadelphia (Journal A. M. A., Oct. 27, 1923), that in sugar tolerance testing blood sugar estimations be made routinely just before one-half hour, one hour and two hours after a standard glucose meal. The curve of alimentary hyperglycemia may reach its maximum and return to normal within one hour after glucose ingestion. This is true in certain diseases, notably mild diabetes mellitus, as it is in normal persons. In order to differentiate such cases of mild diabetes from conditions in which there is a lowered renal threshold for glucose, it is necessary to determine the blood sugar percentage at less than hourly intervals.

PSORIASIS AND TAR TREATMENT

The general treatment of psoriasis (arsenic, X-rays, intravenous sod. salicyl. injections) is always unsatisfactory, when these methods alone are applied. Local therapy is still the most important factor to be considered.

Prof. Herxheimer (Frankfort) has found

in the course of 30 years experience with 500 psoriasis patients that the effect of preparations of tar is as good as, if not better than that of Chrysarobin, to which they are closely allied. The only advantages of Chrysarobin are its cheapness and the fact of its being more cleanly. Three remedies of this kind may be particularly recommended:

Lithantrol, Carboterpin and Carboneol (Hirsch Apotheke, Frankfort). The two first-named preparations may be prescribed as 10, 20, 30 and 50% ointment: the 50% can be supplied by the pharmacist when he prepares lithantrolum or carboterpinum spissum. Both preparations may also be applied in a 5% to 50% alcoholic solution. The underwear is less discoloured by the use of lithantrol than by Carboterpin, but the stains are in both cases easily washed out. Tar acne very rarely results after the use of these remedies; neither tar eczema nor tar nephritis have been seen in such cases. Carboneol, thinly applied with a brush, or as an ointment, is efficacious in treating extremely persistent patches, but it is of a dark color which stains the under-clothing. (Klin. Wochschr., No. 29, 1923.)

MIGRAINE — TREATMENT WITH LUMINAL

Prof. J. Strasburger (Med. Policlinic, Frankfurt) calls attention to many points of similarity between migraine and epilepsy. On this basis, he has treated migraine with luminal for many years past, with excellent results. After 0.1 g. had been given daily for weeks or months (as one dose in the evening, or divided into two doses, during the day) the number and severity of the attacks diminished to a wonderful extent. Improvement in the general condition and working capacity of migraine patients then followed. On interrupting this treatment, further attacks usually occurred after some time. Luminal may be taken in this way with perfect safety for months. A patient of the author's has been taking it for the last 2 years. The effect of luminal in migraine is apparently specific, as in epilepsy. It is not necessary to increase the dose in the course of time. The daily dose may, on the contrary, be somewhat reduced after a time in some cases, without affecting the result. 0.05 is, however, the minimum daily amount from which any result can be awaited. The only unpleasant secondary effect occasionally complained of is constipation. A purgative must, therefore, be prescribed from time to time. (Klin. Wochenschr. No. 34, 1923.)

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*Annual Meeting, Omaha
May 13, 14, 15*

IMPORTANT

At the next meeting of the American Medical Association the membership of the House of Delegates of this body will be reapportioned. This will be based on the number of members reported paid by each State, at the office of the American Medical Association, April 1, 1924. If Nebraska is paid up by this time we will probably get three delegates. So pay your dues. Send \$5.00 plus your local society dues to your county secretary at once as dues are delinquent now.

CALL FOR PAPERS

All members who desire to read papers before the State Meeting at Omaha, will please send in their names and titles at once. This is a special appeal to doctors throughout the State.

"Give our Advertisers a Square Deal"

A MISSPENT LIFE

In the early dawn of the present century there came to a county seat town in North Nebraska a young physician of fine appearance, good address and giving the impression of good professional training. He had attended the Omaha Medical College but was graduated from one of the best Chicago medical colleges. Professional honor he had none. His insinuating manner soon gave him a clientage and business turned his head. About the time his star was in the ascendent he fell a victim to whisky, and a despised confrere had to minister to him when he acquired delirium tremens. He went to Denver, was arrested at the instigation of the Colorado State Board when it was discovered that he had tampered with the date on his diploma, but was released on promise to leave the state. He next turned up in north central Kansas but after a short time went to Minneapolis. After several years he was heard from at Council Bluffs as one of the "United Doctors." Several months ago he appeared in several cities in the southeastern part of Nebraska in a new role—a "specialist of St. Louis" on his own behalf, promising to cure all incurable and some curable diseases without surgery. This career soon ended, however, when a meddlesome county attorney asked for his diploma and certificate of registration. Oh, the pity of it! Here was a young man of good family, bright, ("not any brighter than he let on," as one of his classmates once told the writer,) of good training, who could have carved an honorable career for himself, but who through misdirected efforts has followed a life of professional dishonor.

Let the reader point the moral.

TRUE AND FALSE PUBLICITY OF MEDICINE

The most conspicuous characteristic of medicine, from the public's viewpoint, is its impenetrable cloak of mystery. Medicine as a whole, as well as its individual members, has always been represented by a very little of true and a great deal of false publicity. The extremely personal nature of the vocation, the credulity of the public and the mysteries of nature are factors causing a tremendous tension within the ranks of medicine which the layman does not understand and misconstrues as jealousy. It is true that very few men have ever equalled, by their efforts, the calling of the art of medicine, but most men, although inherently defective from a one hundred per cent altruistic stand-

point, do strive toward the ideal even though they may not reach beyond the fifty per cent mile post.

The honest or altruistic vocations can, and should, bear the most searching scrutiny and publicity, and if the practice of medicine is as honest and serviceable as it professes, its antique cloak of mystery must be abandoned. As an example of what little the public knows about medicine, Omaha recently endeavored to raise funds for a Community Chest and had no little difficulty in reaching the desired quota. The public was not as generous toward charity as was expected, and the solicitors were greatly surprised when physicians did not contribute more than the average layman. They seemed to think that medical men were unusually well supplied with money and did not know, or failed to take into consideration, that the majority of practitioners of medicine devote a great deal of time and effort in a charitable way toward the public. The physicians' charity, in existence since the origin of medicine, has had little recognition. It would not be unwise for us to say to the public, "We have always taken care of the poor when they were sick, why cannot you start now to take care of them otherwise?"

Can medicine afford publicity? Is there anything about the methods of practice the public should not know? Individually or collectively, can men of medicine afford to fail to inform the public how the practice of medicine is carried on, especially as to the means of obtaining the public's confidence? These and many other questions must be taken up by the Publicity Committee of our state society before any definite action is taken. This committee has no easy task ahead of it but it will endeavor to differentiate principles from personalities, dwelling entirely upon the former. Medical men who are honest (and they know when they are, or are not,) need have no fear about medical publicity and should be intensely concerned with a better understanding between clean medicine and the thoughtful public.

While writing this editorial I wish to exemplify one example of false publicity which results in harm only to medicine in general. It has been brought to my attention by more than one that it was open talk around Omaha that I, C. A. Roeder, had recently had a malpractice suit in South Dakota, losing a judgment of \$80,000.00 which had been brought,

in favor of the plaintiff. Never, fortunately, having had a malpractice suit, such a false rumor simply shows up a good percentage of medical men as thoughtless gossips, and they could be made far more useful if their efforts might be used to build up medicine by proper publicity instead of trying to tear it down by falsehoods. From a personal experience with certain competitors here and in Grand Island, I can safely state that what too many men in medicine seem to relish from a publicity standpoint is false rumor.

Is the profession in Nebraska clean enough and strong enough to unite and help propagate to the public, clean and wholesome news about its members and medicine as a whole, or must it live upon fear and secrecy and deteriorate within itself by failing to open its doors widely and fearlessly to the public in order to weather the present crisis in civilization? If we can afford fearless publicity you have a committee which will work beyond your expectations. Owing to a fear of publicity this committee has already been viciously and dishonestly attacked by members of our profession; but do not be deceived by stories emanating from unfounded sources, because medicine, like all the rest of civilization, is in a serious situation and requires a much closer acquaintance with the public, which can only be brought about by publicity.

C. A. Roeder, Chairman,
Committee on Publicity.

MALPRACTICE SUITS

It is interesting to notice the numerous malpractice suits brought against members of the medical profession and those in allied work. If one's curiosity is stirred to a sufficient extent he may be led to investigate the origin and course of said suits. If he does investigate these suits he will almost invariably find that they originated in the cheerful work of an ambulance chasing attorney or the suggestive statements of a member of the profession as jealous in temperament as he is small in caliber. Every man knows that his fellow in the profession, even if from selfish motives alone, must try to do the best he can with the ability given him by nature and education. We also know that every member of the profession today practices through a license given him by this state and which implies the confidence of the state authorities in his ability and fitness to practice medicine. But at best he belongs to the human race in spite of all education and all licensure. He is still endowed with human

traits and human frailties. He may make mistakes, he may "be up against" conditions over which he has no control and one or both of these facts may bring to him misfortune. The same misfortune may come to his neighbor the very next case he has. Knowing every one of these facts to be true there should be no place in the legal profession for any man who will take upon himself the prosecution of an unwarranted case upon a contingent fee. There should be no place for a man who will make his fellow's burden heavier or condemn the mistake which might perchance be his. Only recently in this state, a physician might almost have been considered the prosecutor from the manner in which he helped to push an unwarranted malpractice suit against a fellow of our Association. The defence won, but this is not always the case and always brings expense, anxiety, and trouble to those who have to contend with these unfair suits. If the medical profession as a unit frowns upon this thing and demonstrates in our own profession their attitude, these suits will lessen in number and the ambulance chaser will seek a legitimate means of support.

—B. F. Bailey.

CORRECTION OF EXTREME FLAT FOOT

Dr. John Prentiss Lord, Omaha, before the San Francisco Meeting of the A. M. A. last June (J. A. M. A. p-1502-07) read paper of above title.

In 1916 Dr. Lord conceived the idea of osteotomy of the os calcis with displacement inward of its posterior fragment in cases of extreme flat feet.

One of the first objects to be attained in the correction of flat foot is to so change the alignment of weight bearing as to shift the center of gravity inward and thus transmit the weight outside the center of the feet and relieve the longitudinal arch.

He reports a series of fourteen cases covering a period of seven years in which this operation has been done. Only one case, however, had this operation alone.

Supplementary procedures as arthrodesis of the astragalo-scapoid joint, lengthening of the tendon Achilles and osteotomies of other tarsal bones of any procedure that may be indicated in any particular case, are usually necessary.

The technic consists in a curved incision a finger's breadth behind the external malleolus. A thin broad curved chisel is driven

obliquely through the os calcis with its lower edge held about one cm. forward. The posterior fragment is then displaced inward and the foot put up in plaster cast in extreme varus with the arch moulded up firmly.

In four to eight weeks, depending upon whether the case is unilateral or bilateral the casts are removed and the feet strapped, followed by metal foot plates to preserve the re-formed arch. The disability ranges from four to nine months in bilateral cases but in one unilateral case, walking was painless after six weeks.

In his earlier cases a nail was used to maintain the position of the posterior fragment. In his later cases nails were not used, the position having been controlled by the moulded plaster. In a search of the literature it was found that this operation was originated by Gleich of Austria and it has been used rather extensively in central Europe but it has not been popularized in this country.

—H. F. Johnson.

MEDICAL MISSIONARY TO CHINA

Dr. A. J. Stewart, widely known practitioner at Mitchell, Nebraska, for the past 17 years; councilor of the Nebraska State Medi-



DR. A. J. STEWART

cal Association for the 12th Dist., serving his fourth term, will sail on the S. S. President Wilson from San Francisco, Feb. 7, to enter the field as a medical missionary in China.

Dr. Stewart was born at Maquoketa, Iowa,

in 1868. He graduated from Hahnemann Medical College in 1896, practiced at David City, this state, about 9 years, then entered the University of Illinois Medical School, graduated therefrom in 1906 and located at Mitchell. He was a pioneer in the North Platte valley and was the first doctor to do major surgery in that field. He has always enjoyed an extensive practice and his decision to enter the mission service is rather startling. He goes to the Shaowu Mission hospital at Fukien, in the interior of China and will have charge of a hospital that last year treated about 10,000 cases, many of them out-patients. The good wishes of the Nebraska profession accompany him.

EDITORIAL PARAGRAPHS

The next annual meeting of the American Medical Association will be held in Chicago, June 9 to 13. Earlier, the date had been fixed for the third week in May. The change was made for reasons involving weather conditions and national politics.

Financial difficulties swamped the Medical Arts Building, Omaha, after the structural iron had been placed. It is undergoing foreclosure.

The latest medical specialty seems to be moonshining and bootlegging—whereat we blush. No, the country doctor does not need to resort to it to make a living. Rural communities still support, and will continue to support, the doctor who gives faithful service.

The mortality from typhoid fever has been reduced 84% in the cities of the United States in 12 years.

It is said that fifteen million women and children have died of disease and starvation in Europe and the Near East as a result of the series of wars which began in 1914.

It is thought that the St. Louis diploma mills, recently exposed, have not contributed any fake doctors to the Nebraska profession, for the reason, that those applying for registration in this state are checked up on their arrival in this state and for the further reason that a rigid examination is required by the Nebraska State Medical Examining Board.

It is reported from unofficial sources that a specific for locomotor ataxia is soon to be released from the Rockefeller institute for medical research. Tryparsamid, or A-63, is the name given to the laboratory product.

Experiments are said to have given fifty per cent of cures.

OPTIMISM AND PESSIMISM

There are optimists and pessimists in the medical profession as in all the other breadwinning vocations of life. The optimist views his patient as an opportunity, a privilege, a chance to serve his fellow man. When he enters the sick room his face is aglow with the joy of real service. He does not "weary in well doing", for before him is a vision of a body relieved from suffering, a brother restored to health and happiness.

If the patient be a child he visions a future man or woman laboring in the fields of usefulness and the smile upon his face cheers the little sufferer and helps to restore it to health and vigor.

The pessimist sees only the dark side of the picture, and his face reflects his thoughts. If his patient is suffering from influenza he is sure that pneumonia is lurking just around the corner. If the patient is a child he can see all the complications which might arise in the case and the dark frown upon his face scares the little patient into another week of suffering.

The optimist, through being over sanguine, is liable to overlook an important symptom and the pessimist to find many which do not exist.

The optimist sees the world go round,
And hears the soft winds sigh;
The pessimist hears the axle creak,
And fears the gears are dry.

The optimist sees the bright round sun,
And the moon as she floats on high;
The pessimist feels the chill in the air
As the storm clouds darken the sky.

The optimist hears love's tender note
In the voice of the coming years;
The pessimist sees but a coffin and shroud
And the whole world drenched in tears.

We need the optimist every day
To help us with life's load;
The pessimist, too, we need sometimes
To show us the holes in the road.

—G. O. Remy.

ANNOUNCEMENT

The Eighth Annual Clinical Session of The American Congress on Internal Medicine will be held in the Amphitheatres, Wards and Laboratories of the various institutions concerned with medical teaching, at St. Louis, Mo., beginning Monday, February 18th, 1924.

Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session.

Address inquiries to Dr. Frank Smithies, Sec.-Gen., 1002 N. Dearborn St., Chicago, Ill.

NEBRASKA SECTION, CLINICAL CONGRESS, AMERICAN COLLEGE OF SURGEONS

The Clinical Congress of the American College of Surgeons of the Nebraska section will be convened at Omaha on Monday and Tuesday, February

18 and 19, 1924, at the Hotel Fontenelle, which will be headquarters.

Registration 8:00 to 9:00 A. M. on the Mezzanine Floor.

Dry Clinics will be given in the ball room both forenoons by the Nebraska members and some of the visiting surgeons of national reputation.

The afternoon of Monday, from 2:00 to 4:30 P. M., there will be a hospital conference, comprising the following program:

Remarks by the chairman.

Allen D. Craig, M. D., Chicago Associate Director, American College of Surgeons, will speak on "The Hospital Requirements of the American College of Surgeons."

Dr. Albert J. Ochsner, President of the College, will speak on "Hospital Standardization as a factor for Better Surgery."

James T. Case, M. D., Battle Creek, Mich., Surgeon Battle Creek Sanitarium and Chief of the Department of Roentgenology, discusses the "Value of Physiotherapy in Hospitals."

Emil G. Beck, M. D., Chicago, speaks on "Hospital Standardization as a factor in Increasing Hospital Efficiency."

Rev. C. B. Moulinier, S. J., Milwaukee, President Catholic Hospital Association, will present the "Underlying Principles of Hospital Standardization."

Irving Cutter, M. D., Dean of the Nebraska College of Medicine, will make observations on the "Results of the Campaign of the American College for Hospital Standardization."

Rev. Father Whelan, S. J. Regent Creighton University Medical College, speaks on "Cooperation in Hospital Standardization."

4:30 to 5:00 P. M. Annual meeting. Election of officers for the ensuing year. Dr. Craig will give an illustrated lecture on the "Activities of the American College."

There will be a dinner for the fellows and guests at the Fontenelle at 6:00 P. M.

From 8:00 to 10:00 P. M. the community health meeting will be held at the new Technical High School, Dr. A. F. Jonas presiding.

Dr. Albert J. Ochsner, President of the College, will give an address on the "Program of the American College of Surgeons."

Dr. Malcom T. MacEachern, Associate Director, of the College of Surgeons, will speak on the "American College of Surgeons and Better Hospitals."

Rev. C. B. Moulinier, S. J. Milwaukee, President Catholic Hospital Association, subject: "Our People, our Hospitals and our Profession."

Dr. Allen D. Craig, Associate Director of the College will speak on the "American College of Surgeons as a factor in Public Health."

A health film "The Rewards of Courage" will be shown.

This meeting is for the public.

The forenoon of the second day will be occupied with clinics at the hotel ball room.

The afternoon will be devoted to the scientific session.

Dr. Albert J. Ochsner will speak on "Compression of the Lung in Unilateral Tuberculosis."

Dr. Emil G. Beck, "The Cancer Problem."

Dr. Carl Arthur Hedblom, Mayo Clinic, "Thoracic Surgery."

Dr. J. S. Welch, Lincoln, "Fractures."

Dr. J. T. Case, of Battle Creek, Michigan, "Physical Therapy in the Aftercare of Surgical Cases."

Dr. H. Von W. Schulte, Dean, Creighton University College of Medicine, Omaha, _____.

There will also be held on the second day a meeting for the special discussion of hospital problems, to which hospital staffs, superintendents, trustees and benefactors of hospitals are especially invited.

All members of the American College of neighboring states are specially invited. Attendance by non-members of the college will be by invitation.

THE SOCIETIES

The regular meeting of the Omaha-Douglas County Medical Society was held on Jan. 8. The following program was given:

Dr. W. O. Bridges discussed "Pneumonia and its Complications", talking about the relative steps of isolation of the organism of pneumonia, then the more important symptoms, considering some of the points in physical findings and detailing an outline of his own treatment. He thoroughly took up some of the more prominent complications and laid some stress on the treatment of heart conditions associated with this disease process. He mentioned the relation of pneumonia as a sequence of operative procedures.

Dr. Carl Ballard followed with a discussion of the "Roentgen Findings in the Thorax."

Dr. Herbert Davis discussed "Acute Empyema," considering the early diagnosis and emphasizing particularly aspiration as a diagnostic and therapeutic measure before thick pus had been formed. When thick pus was present, wide incision was indicated with adequate drainage. Dakin's solution was favored by him, also forced feeding and various lung exercises. He gave ten causes of why such cases become chronic.

The three papers were discussed by Drs. McClanahan, Jonas, Brown, Connell and A. B. Somers. Dr. McClanahan brought out some of the points in etiology in children, stressing the fact that after bronchial pneumonia following measles these cases almost always had an empyema, which was not true following a lobar pneumonia. Dr. Brown favored gentian violet treatment, especially in bronchial fistulas. Dr. Jonas favored rib resection in most of these cases and did not use Dakin's solution except when the case was not doing well. Dr. Cornell described a flap operation he had devised for the treatment of these cases.

—Earl C. Sage, Secretary.

The Saline County Medical Society at a meeting at Crete, Dec. 18, elected Dr. R. C. Panter, Dorchester, president; Dr. Frank T. Hamilton, Friend, secretary-treasurer and Dr. Porter F. Dodson, Wilbur, delegate.

The Box Butte County Medical Society, at a meeting December 16, at Alliance, elected Dr. J. P. Weyrens, Alliance, president and Dr. E. M. Baskin, secretary-treasurer. At the regular monthly meeting on Jan. 3, a paper was read by Dr. M. J. Baskin on Present Status of Vaccine and Serum Therapy.

The Surgical Club of Omaha elected Dr. Max Emert, president, and Dr. William L. Shearer, secretary-treasurer. Dr. Arthur Sweeny, Minneapolis, professor of medical jurisprudence at the University

of Minnesota, spoke on The Melting Pot at the December meeting.

The Lancaster County Medical Society, at the annual meeting December 15, elected Dr. K. S. J. Hohlen, president; Dr. D. D. Sanderson, secretary; Dr. G. H. Walker, treasurer and Dr. Hohlen was also designated delegate. A committee composed of Dr. D. C. Hilton, Dr. J. S. Welsh and Dr. K. S. J. Hohlen was instructed to get information as to the legal action necessary for the erection of a permanent home for the society.

The Scotts Bluff County Medical Society, at the annual meeting Dec. 27 at Scottsbluff, elected Dr. N. H. Rasmussen, Scottsbluff, president; Dr. A. L. Cooper, Morrill, secretary-treasurer, and Dr. W. E. Shike, delegate.

The Cuming County Medical Society met at West Point, Dec. 12, with 12 of the fourteen physicians of the county present. A mid-day luncheon was served. Dr. H. W. Francis, Bancroft, presented a case for demonstration. The present incumbents were reelected, namely: Dr. T. D. Thompson, West Point, president, and Dr. I. L. Thompson, West Point, secretary-treasurer.

The Richardson County Medical Society met at the Falls City hospital, December 20. A medical delegation from St. Joseph, Mo., was present and an interesting meeting was had. Dr. H. R. Miner was elected president; Dr. O. F. Lang, secretary-treasurer and Dr. E. R. Hays, delegate.

The Johnson County Medical Society held its annual meeting at Tecumseh, on January 7th and elected Dr. C. D. Barnes, president; and Dr. Dora M. Judkins-Davies, secretary-treasurer.

The Lincoln County Medical Society held its annual banquet and election of officers at the Palace Hotel, North Platte, on Jan. 3. The following officers were elected: Dr. H. H. Walker, president; Dr. J. B. Redfield, secretary-treasurer; and Dr. T. J. Kerr, delegate. The society donated \$9.00 to the relief of German medical science. It was decided to hold a round table luncheon and discussion each Wednesday noon.

The first noon meeting was held on Jan. 9 with a large attendance. Diphtheria was discussed in an informal way.

The Saunders County Medical Society, at their annual meeting elected Dr. W. W. Noyes, Ceresco, president; Dr. Frank Tornholm, Wahoo, secretary; and Dr. A. S. von Mansfelde, Ashland, treasurer.

The Buffalo County Medical Society elected Dr. C. V. D. Basten, Kearney, president; and reelected Dr. C. L. Ayers, secretary-treasurer.

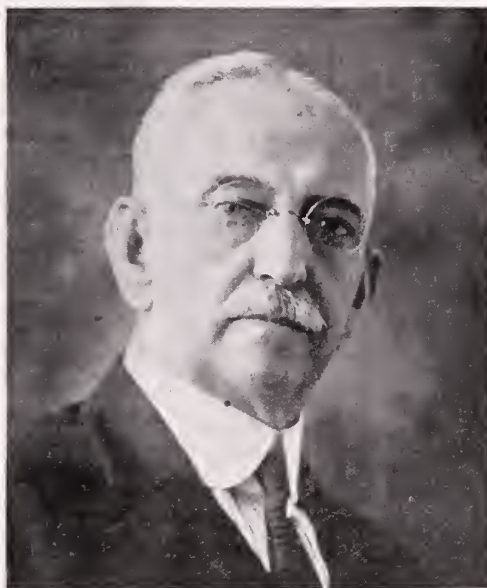
Before the Gage County Medical Society, Beatrice, January 15, Dr. J. M. Patton, Omaha, gave an illustrated lecture on the eye. Dr. L. T. Sidwell, superintendent of the Institution for the Feeble Minded was elected president, and Dr. J. C. Tucker, Beatrice, secretary-treasurer.

Fifteen physicians attended the Scotts Bluff County Medical Society, January 10, at the Lincoln hotel. Dr. F. B. Young gave a paper on Mental and Nervous Diseases. Miss Lydia Keller, superintendent of the West Nebraska Methodist hospital gave a paper on "My Experiences in China."

NECROLOGICAL

Dr. Robert McConaughy, York, Nebr.; Jefferson Medical College, 1875; president, Nebraska State Medical Association, 1899-1900; sometime president, American Association of Railway Surgeons; past commander of the Knights Templars of Nebraska; died on the Meridian Highway a few miles north of York, on December 18, apparently having collapsed while in the act of changing tires, aged about 71.

Dr. McConaughy was born at Mount Pleasant, Pa., and received his literary education at Lafayette College, that state. He was the son of a physician and after completing his medical course engaged in practice with his father in his native town for ten years. He came to York in 1885 and for thirty-



DR. ROBERT McCONAUGHY

eight years enjoyed the confidence and respect of his clientele and of the community. He was an able physician and a close student of the modern trend in medical thought. He had pursued post-graduate study in Chicago and in London. He had been for many years an active member of the Nebraska State Medical Association and stood for high ideals in medicine. He was active in Presbyterian church work and for fifty years sang in the choir, for thirty-five years was an elder, for many years was superintendent of the Sunday School, and was Nebraska representative to the General Assembly three times. He was city physician of York for 25 years and always interested himself in the various civic activities of the community. He was the oldest practicing physician in York county.

Dr. Thomas V. Davis, Lincoln, Nebr.; Lincoln Medical College, 1902; practicing physician at Lincoln for 20 years, died during the holidays, aged about 57. A widow and two sons survive.

Dr. W. L. Capell, Omaha; Barnes Medical College, 1894, died on January 8, aged 70.

Dr. Frederick Bacon, Omaha; Keokuk Medical College, 1870; for upward of thirty years a practitioner in Omaha, died Jan. 10, after an illness of a year, aged about 66.

HUMAN INTEREST TALES

Dr. G. W. Williams has moved from Exeter to Minatare.

The service car of Dr. G. H. Brash, Beatrice, was stolen recently.

Dr. M. B. Wilcox has located at North Platte to practice surgery.

The death of Dr. Albert Abrams, of oscilloclast fame, is announced.

Clarks, Nebr., has a new physician in the person of Dr. H. A. Drew.

Dr. A. J. Hebenstreit, formerly of Howells, has located at Juneau, Wis.

The profession sympathizes with Dr. E. C. Sage, Omaha, in the loss of his wife.

Dr. J. S. Broz of Omaha has become associated with Dr. W. H. Crawford of Rushville.

Dr. A. H. Farnsworth, Grand Island, spent the holidays with his family in Philadelphia.

Dr. and Mrs. Deemer, Chadron, have returned from a visit to the ancestral home in Ohio.

Dr. Wm. J. Hawes, has moved from Fairbury to Kansas City where he will practice hereafter.

Thieves ransacked the office of Dr. B. H. Clark, Ashland, and took away all narcotics to be found.

Dr. Harry Collins of the Mayo Clinic, Rochester, Minn., spent the holidays with his parents in Omaha.

Dr. H. v. W. Schulte was elected president of the Omaha Professional Men's Club for the current year.

Dr. J. N. Plumb has been appointed city physician of York, succeeding the late Dr. Robert McConaughy.

Dr. S. A. Preston, Fremont, has succeeded Dr. Morris Nielsen, as councilor of the Fifth Councilor District.

The marriage of Dr. Delmar L. Davis, Omaha, and Miss Clara Grey, Des Moines, at Chicago, is announced.

Dr. Everett E. Angle has become associated with his father, Dr. E. J. Angle, Lincoln, in the practice of urology.

Drs. F. A. Brewster, R. P. Palmer and R. G. Green, all of Holdrege, have formed a partnership to do group practice.

Dr. R. C. Jaenike, Palmer, has secured an appointment in the U. S. Public Health service, but his station is not yet known.

Dr. A. F. Tyler, Omaha, sustained an injury to one of his knees just before the holidays and was confined to his home for some time.

The Council Bluffs Clinic building, erected at a cost of \$150,000, was opened recently. Dr. Donald McCrae is the head of the clinic group.

Dr. Jennie Callfas, Omaha, democratic national committee woman for Nebraska, attended the meeting of the national committee at Washington, D. C., early in January.

Dr. H. M. McClanahan, Omaha, sailed on the "Belgenland", Jan. 19, for a two months' cruise on the Mediterranean. Dr. Henske, his associate, is taking care of his office.

"Problems of the Medical Profession" was discussed by Drs. Palmer Findley and A. D. Dunn at the noonday meeting of the Omaha Professional Men's Club, on January 7.

Dr. E. W. Rowe, Lincoln, before the American Association for the Study of Goiter, Bloomington, Ill.,

Jan. 23-25, read a paper entitled "The Roentgen Treatment of Thyrotoxicosis."

Dr. E. B. Bradley, Spencer, has sold his interest in the Spencer hospital. Dr. Bradley and the late Dr. H. A. Skelton had been partners in practice and had joint interests in the hospital.

Dr. G. H. Brash, Beatrice, who submitted to an operation for tumor on the brain, at Boston, last summer, and who has been in failing health since that time, was taken to a sanitarium for treatment.

Dr. Alfred J. Brown, Omaha, has contributed a valuable article to the history of old masterpieces in surgery by an article published in *Surgery, Gynecology and Obstetrics* on "The Surgery of Hieronymus Brunschwig".

Dr. Irving S. Cutter, dean of the Nebraska University college of medicine has returned from a two months' stay in Europe. He attended an international conference on medical education and gave an address before that body.

The spacious home of the late Dr. George J. Haslam, Fremont, has been purchased by Mrs. Nora O. White, a trained nurse, who will remodel the building and convert it into an up-to-date hospital to be known as Military Avenue hospital. It is understood that the old Fremont hospital is to be converted into an apartment house.

Dr. F. A. Long, editor of this journal, accompanied former U. S. Senator William V. Allen to Los Angeles, early in January, where the latter hoped to get relief from an early carcinoma under the tongue by the use of the Percy Cautery method. The patient suddenly succumbed to heart block, one hour after operation. It had been known that the patient had a myocardial lesion, but under the circumstances it was concluded that the risk could be taken.

Dr. W. L. Curtis, who has been associated with Dr. J. J. Hompes, at Lincoln, for the past five years, after twenty-seven years practice in Nebraska, moved to Long Beach, California, Jan. 1st. He has purchased the practice of Dr. J. H. McKellar, and his address will be 805 Farmers and Merchants Bank Bldg. The Lancaster county medical society gave him a farewell dinner. Dr. Curtis was an active member of the Nebraska State Medical association for many years and was one of the vice presidents two years ago.

BOOKS RECEIVED

RHUS DERMATITIS. By James B. McNair. Its Pathology and Chemotherapy. Cloth. Pages 298 with illustrations. Chicago: The University of Chicago Press. 1923.

PRACTICAL LOCAL ANESTHESIA. By Robert Emmett Farr, M. D., F. A. C. S., Cloth. Price \$8.00. Pages 529 with illustrations. Philadelphia and New York: Lea & Febiger. 1923.

NON-SURGICAL DRAINAGE OF THE GALL TRACT. By B. B. Vincent Lyon, A. B., M. D., Cloth. Price \$10.00. Pages 640 with illustrations. Philadelphia and New York: Lea & Febiger. 1923.

DISEASES OF THE SKIN. By Frank Crozer Knowles, M. D. Cloth. Price \$6.50. Second edition, thoroughly revised. Pages 595 with illustrations. Philadelphia and New York: Lea & Febiger. 1923.

STUDY OF MENTAL DISORDERS. By Francis M. Barnes, Jr., M. A., M. D. Cloth. Price \$3.75. Pages 295. St. Louis: C. V. Mosby Co., 1923.

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CONTENTS

	Page		Page
Notes On Clinical Surgery, John E. Summers, M. D.....	77	EDITORIALS—	
Megacolon (Giant Colon), Charles J. Drueck, M. D.....	82	Call for Papers.....	110
The Use of Insulin in the Treatment of Diabetes, Frank Conlin, M. D.....	89	Read This.....	110
Empyema Complicating Pneumonia, J. D. McCarthy, M. D.....	95	Medical Society Politics.....	110
Some Surgical Diseases of the Right Kidney, W. J. Arrasmith, M. D.....	99	Periarterial Sympathectomy.....	111
Osteomyelitis of the Ilium, Frederick G. Kolouch, M. D.....	104	Selling Medical Knowledge and Skill..	111
The Melting Pot, Arthur Sweeney, M. D.....	107	The Diagnosis of Early Pulmonary Tuberculosis	112
		Editorial Paragraphs.....	113
		Physio-Therapeutic Week in Kansas City, April 10 to 18.....	113
		The Societies.....	114
		Human Interest Tales.....	116
		Necrological	116

NOTES ON CLINICAL SURGERY

John E. Summers, M. D., Omaha.

Professor of Clinical Surgery, Medical Department, University of Nebraska.

Membre Société Internationale de Chirurgie; Fellow American Surgical Association; Member Western Surgical Association, etc.

Two hundred and twenty-seven clinical cases were referred to my service in the University Hospital during parts of the fall and spring semesters 1922-23. The great majority of the operations performed were done by myself; however, a number of interesting patients were operated upon by the younger surgeons assigned to my service—Drs. John R. Nilsson, J. J. Keegan, and latterly, C. H. Waters. Neurological, urological, and fracture cases are taken care of in the hospital by surgeons selected for this work.

DISEASES OF THE APPENDIX, THIRTY CASES—ONE DEATH.

Acute appendicitis, not ruptured, nine,—one complicated with pregnancy; ruptured,

four complicated with general peritonitis. Appendiceal abscesses, three. Subacute appendicitis, two. Chronic appendicitis, twelve.

One of the cases of ruptured appendicitis later developed abscesses in the left abdomen and in the upper abdomen; the latter was followed by an intestinal fistula draining bile. The patient died. In this instance I am of the opinion that had operation been delayed the outcome might possibly have been different. The operation was done on the fourth day of the attack, (day of entrance into hospital). I requested one of my assistants to do the work. My practice is to operate as early as possible, the time of operation being determined by my judgment

of the condition of the patient,—never by any theory or rule. Except when a patient suffering from an advanced attack of acute appendicitis is almost moribund when first seen, means are at our command so that by the judicious use of morphine, bringing the respirations down to twelve to fourteen per minute in the adult, the giving of glucose and sodium bicarbonate 5 % each, by proctoclysis; also 3000-4000 c. c. of normal salt solution being introduced in twenty-four hours by hypodermoclysis and continued in amounts as indicated, and the withholding of all nourishment by mouth, we may hope to save desperate cases. It may be added that when a patient is vomiting rather frequently and copiously, an enterostomy under local anesthesia, made high up, is also life-saving; it is strongly indicated as in other forms of obstruction of the bowels. In England and Wales the death rate of appendicitis is not decreasing, being about 2500 deaths a year. It is not decreasing in our country. There is still, too often, delay in operating, and there are too many illy-trained, injudicious operators.

AMPUTATIONS, SEVEN—ONE DEATH.

1, Hip-joint, for osteomyelitis of femur with spontaneous fracture. 2, Arm, through junction of upper and middle thirds, for large round celled sarcoma of ulna,—followed by intensive x-ray treatment. 3, Leg, through junction of middle and lower thirds; run-over accident. 4, Boy six years old, run over by a truck, suffered a compound, comminuted fracture of the humerus with extensive laceration of the soft parts. Amputation was advised but refused by the parents. Several days later, gangrene having developed, amputation was done, but the boy died two days later. 5, Thigh, for compound fracture of the femur, followed by osteomyelitis and persistent infection, (patient admitted in this condition), which became so serious as to endanger life. 6, Thigh, for diabetic gangrene of foot; woman fifty years of age; spinal and gas anesthesia. 7, Amputation of arm—junction of middle and lower thirds. Man forty-three years of age, had a useless fore-arm and hand, the result of an unfortunate infection of the elbow and fore-arm, treated elsewhere.

Two of these cases, No. 1, and No. 4, are of great interest. The first, a boy, twelve years of age, had been treated for rheumatism for several weeks prior to his coming

to us. He was very ill, profoundly septic, and the outlook was bad. Suitable drainage operations were done, but in spite of our efforts the disease progressed; bed-sores developed, spontaneous fracture of the upper femur took place, the case looked hopeless—amputation was determined upon. Under spinal anesthesia, after first tying the common femoral artery and vein, the limb was removed at the hip-joint,—bleeding vessels clamped, the wound packed and drawn together by towel hooks—no sutures. As the result of painstaking efforts upon the part of internes and nurses, the boy reacted from profound shock, and made a most satisfactory recovery. We, in my service, try to prevent shock by the careful handling of patients before, during, and after operation. We try to gain the confidence of our patients and then keep it—try to avoid giving the impression that patients are regarded simply as cases. In the instance of the boy with the shattered arm, I think I should have been more insistent upon the advisability of a primary amputation.

All of the amputations were done by me, except No. 7, which I had my senior surgical interne do.

In a proposed amputation for gangrene in a diabetic,—the gangrene involving a greater or less part of the foot,—there are two cardinal rules to bear in mind: First, the proper general preparation of the patient; the urine and blood should be rendered as free from sugar as possible by diet, and the administration of alkalies with or without the use of insulin, as experience with this drug in general medical and surgical practice develops. Second, the amputation should always be made above the knee-joint, through the lower third of the thigh; there is too much danger of sloughing and non-union of the flaps if the limb is removed below the knee. Many experiences in both private and public practice have proven to me the wisdom of these rules. Every diabetic, the subject of a proposed operation, no matter how trifling, should have the benefit of proper preparation as just indicated, and when possible the work should be done under spinal or local anesthesia.

It is interesting to note that sympathectomy is now being done by many French surgeons for most forms of serious circulatory disturbance in the extremities, particularly those of the lower, and strange

to relate, if reports are confirmed, most of these sufferers are benefited, even the diabetics. Leriche's original recommendation has almost been swallowed up in the broadening of the indications for the performance of the operation.

BREAST TUMORS.

Carcinoma, three; fibroma, one; galactocoele, one; chronic mastitis with hypertrophy, in male, one.

Two of these were of special interest: one, that of the galactocoele. The patient, a twopara, recently confined, had been referred to me for operation for the removal of a supposedly large hypertrophied breast. The tumor, which was dissected out without injuring the breast proper, was of a very large grape fruit size, thick-walled, and containing a goblet full of creamy milk-like fluid. The tumor was present before the patient's last confinement and had developed during the lactating period following the first confinement several years previously. Galactoceles are rare formations, the most common being of the cystic type. There is, however, a liquid infiltrating form and a solid form, which latter is made up of the solid constituents of the milk. The cystic types should be dissected out,—never incised, packed and drained; the other types are probably best treated by removal of the breast. The second interesting case was that of a relatively large, infiltrating tumor in the breast of an athletic young man twenty years of age. The breast was removed and the tumor was proven microscopically to be inflammatory in character,—a true chronic mastitis. The condition had been in existence a number of months but was painless. The axillary fat and several inflammatory glandular swellings were removed. The pectoral muscles were not disturbed. This growth was not one originating as a mastitis adolescentium, there having been no history of any inflammatory turgescence in the breast, or milky discharge from the nipple, at, or about the time of puberty. The origin of the mastitis in this instance, as is so in the majority of cases, was evidently traumatic, the young man being a winning runner, hurdle jumper, etc., and having had many falls upon his chest. There was no history of parotitis or other bacterial disease. Malignant disease of the male breast as in the female, may give a history of trauma as its exciting cause. In the youth sarcoma would be the

most likely consequence, yet sarcoma in the male breast is very rare. Sarcoma of the breast in the male before the age of ten, is almost unknown, but it increases in frequency with the age of puberty, and then gradually wanes until it again increases; the maximum of occurrences is at about forty-five years of age.

FISTULA, IN ANO, FOUR CASES.

I have found that it is easier and surer, if one adopts the old-fashioned plan of laying the tracts wide open, protecting the integrity of the sphincter muscle, dissecting out the old tract or tracts, and packing the wounds so as to have repair take place from the bottom. Attempt at primary repair by suture is too often a delusion.

FRACTURES, EIGHT CASES.

Patella, two; tibia, two; Colles, two; ribs, one; clavicle, one. These are cases that fell to the general surgical service because they were emergencies and the fractures were complicating conditions not obvious at the time of admission. There was only one patient of special interest in this small series. A young man was brought to the hospital immediately after an automobile accident. He was in extreme shock; there were multiple severe contusions on both legs and thighs, with a fracture of the tibia and of the clavicle,—same side. The patient was almost pulseless for many hours; the respirations were shallow and there was threatening pulmonary oedema. It appeared as if the man would surely die. Reaction was finally brought about by the employment of heat, position and stimulation to the circulation. Especially was commended the addition of three drams of adrenalin solution (1-1000) to a hypodermoclysis solution. The severe shock in this instance was probably due to fat embolism which not infrequently complicates large or multiple fractures accompanied by severe injury to the soft parts. The symptoms developed may be either of the cerebral or pulmonary type: in the first, there is restlessness followed by stupor; in the second, the symptoms are chiefly pulmonary. The heart is always weak. Treatment is, of course, primarily to fix gently the fracture or fractures by some temporary appliance, to prevent further freeing and circulatory distribution of fat emboli; second, to support the heart in some such way as followed out in the above case; free fat is usually found in the urine.

GALL BLADDER DISEASE, SIX CASES.

Acute cholecystitis, four (two complicated with stones); chronic cholecystitis, one; biliary fistula following cholecystectomy, one. These patients all recovered after operation. The "biliary fistula" closed after establishing better drainage. I could not account for the long-continued drainage, as there was no injury to the hepatic or common ducts when the cholecystectomy was done. It is my practice to put in a small drain after doing a cholecystectomy; it does no harm and may be a life-saver if an undetected slip in technique has occurred at the time of operation. I have seen three fatalities following slips in the practice of one surgeon, an experienced operator; and when such a surgeon as Deaver tells me he has seen a number of deaths follow the complete, or no-drainage plan, it would seem unwise to adopt the practice except perhaps in the occasional very simple case.

HEMORRHOIDS, NINE CASES.

Hernia, twenty-seven cases: Indirect inguinal, seventeen; sliding, one; strangulated, two; umbilical, two; postoperative, three; incarcerated, two.

Hemorrhoids are removed in my Clinic by means of the clamp and cautery, after thorough dilatation of the sphincter muscle; if this dilatation is slowly and thoroughly done there is no after pain and the convalescence is free from all disagreeable symptoms. Several of these patients were operated upon under sacral anesthesia, by my assistants; no pain or discomfort was experienced.

In doing inguinal hernia operations it is my practice to follow the technique of the late Alex. Hugh Ferguson; the cord is not displaced. M. Selig has recently shown experimentally that muscle does not unite to fascia, hence it would seem that the cure of an inguinal hernia is accomplished by, first, the high ligation of the sac,—really all that is necessary in femoral hernia,—and the suturing of the fascia of the external oblique to Poupert's ligament, imbricating this layer with the lower flap of the fascia. Sliding herniae are met with occasionally; I usually see one or more every year; they can be recognized if the sac is always carefully examined before tying it off. These herniae may be found on either side; the sac is thicker than the ordinary one, and is deficient both

posteriorly and externally over the wall of the ascending colon minus a mesentery, and the descending colon. If not recognized a fatality may follow, gangrene developing by interference with nutrition, or at best a fecal fistula form,—the cutting-off of the sac, of which the intestinal wall is a supposed part, being the cause.

UMBILICAL HERNIAE

Operated upon by the Mayo method,—transverse elliptical incision, reduction of contents of the sac, its removal, and then the imbrication vertically of the fascia, the peritoneum having been properly freed and sutured. The transverse incision is, of course, closed in its own axis. To repair successfully post-operative hernia I have adopted the plan of carefully,—very often tediously,—dissecting out each anatomical structure, and suturing them together in layers as they naturally were. Sometimes, where there has been sloughing and loss of tissue, repair can only be accomplished by the use of fascial plastic flaps.

HYDROCELE, THREE CASES.

The simple types of pathology are best operated upon by the incision of the scrotum, turning-out of the tunica vaginalis, its evacuation by a sufficiently sized incision to allow of the delivery of the testicle and the inversion of the tunica vaginalis. The tunica is then sutured high up on the cord by a loosely drawn purse-string, and then with the testicle, replaced within the scrotum, its serous surface against the raw surface of the scrotum from which it had been freed. One of our cases was an extremely large one of the hour-glass type, the upper enlargement causing a pronounced bulging in the inguinal region, not frequently seen; there was another of this same type, very large, in the service of one of our surgeons, which was operated upon successfully by his assistant Dr. Kennedy. The so-called "Bottle Operation," attributed to an American surgeon, is the old French operation; it is the one here outlined. It is my habit in the chronic types of hydrocele when the tunica vaginalis is much thickened, the fluid turbid, and as in the hemorrhagic form, not translucent, to make a free incision, after emptying the fluid carefully, to suture the tunica to the scrotal skin and then pack the cavity with iodoform or sterile gauze. The gauze is removed and replaced from time to

time until the wound closes, which it will do in from ten days to two weeks. Hydrocele in young children may be cured by one or several tapplings. In the infirm adult it should be tapped as required to relieve the discomfort. The injection treatment ought to be abandoned.

INTESTINAL OBSTRUCTION, FOUR CASES.

Of these four cases, three recovered and one died. In the fatal case, as is the usual experience, several doses of cathartics had been given; uncertainty about the diagnosis until abdominal distention had developed and the vomitus had become fecal, was the history before it was decided to send the patient to the hospital. It is the experience of all general hospitals that cathartics have been given in about 75% of all cases before they are seen by surgeons, and as Moynihan says, it is a rare experience to have an opportunity to operate upon a case of acute intestinal obstruction in the early period of the attack, the safe time, when nearly all patients may be saved. Hardly 50% of cases are saved. Why physicians have so much difficulty in differentiating acute intestinal obstruction from the other lesions of the "acute abdomen" is incomprehensible to me,—there are few symptoms in common that cannot be differentiated within four to six hours after the beginning of the seizure. These are cases for the clinician, the bed-side doctor. The laboratory dependent should be side-stepped. The fatal case noted was brought to the hospital toxic, distended, almost moribund, after several days of procrastination. An enterostomy with catheter drainage was made, but the effort was useless. One patient recovered from the obstruction but died in another hospital from suppurative parotitis.

In contrast to this I want to mention a case of Acute Intussusception. A five months' old baby, one hour after nursing, 7:30 A. M., began to cry as if it had severe colic. Had a normal bowel movement, but strained considerably. At 9:00 A. M. passed blood by bowel. Was seen by Dr. E. W. Bantlin, assistant pediatrician, at 9:15 A. M. He found the baby coughing and straining; looking pale; temperature normal. By rectal examination the doctor could feel a mass high up towards the sigmoid. He made the diagnosis of acute intussusception and at 10:00 A. M. took the baby to the University Hospital, where she was placed in my ser-

vice. Doctor Nilsson operated at 11:30 A. M. The intussusception, ileocolic, extending to the anus, was easily reduced; the child recovered but had a stormy convalescence because of an attack of acute bronchitis. Both physician and surgeon in this instance, gave evidence of a duty recognized and performed. Intussusception, the easiest of all forms of acute intestinal obstruction to diagnose, has a very high mortality rate, because of delay in diagnosis and operation. Operated within the first five hours, nearly all babies should recover. From twenty hours and later, the mortality rises to an almost certain fatality.

I am a strong advocate of confining our efforts in cases of intestinal obstruction when seen late, to the doing of an enterostomy and nothing else. If the patient is vomiting, especially if the vomitus is suspiciously feculent, then the intestinal drainage should be established as high in the jejunum as possible. When the obstruction is in the large intestines a caecostomy is the simplest and safest procedure. In my private practice I have had some remarkable results by this method: one where the obstruction followed a Caesarean section done by myself. Under local anesthesia,—the woman in her bed,—a large catheter was introduced into the jejunum, and a life saved which had as nearly crossed the border as any of my experience.

CONDITIONS SUBSEQUENT TO CHILDBIRTH REQUIRING OPERATION.

Malposition of uterus, prolapse with cystocele and rectocele,—nineteen cases. All made uneventful recoveries. In every instance of prolapse a careful perineorrhaphy was performed after first removing as much of the anterior vaginal wall as deemed advisable. In elderly women well beyond the menopause an interposition operation was occasionally done. A suspension operation was usually added to the vagino-perineal one. When the uterus was heavy a supra-vaginal hysterectomy was done and the round and broad ligaments fastened to the stump, or it was suspended as in the Tod Gilliam technique.

EXTRA-UTERINE GESTATION, THREE CASES.

All recovered. None of these patients were in extreme collapse from shock and hemorrhage as we often see them. One was diagnosed as a pelvic abscess and a vaginal section made when the true condition was rec-

ognized. The operator immediately opened the abdomen and cared for the pathology in the usual way.

Although it is generally easy from the history, symptoms and physical findings to recognize a ruptured ectopic pregnancy, it occasionally happens that this may be difficult. Every operator has, once or oftener, found that upon opening the abdomen he had to deal with an acute appendicitis or pyo-salpinx and not the expected ruptured tubal pregnancy,—and all this may be reversed.

TUMORS OF THE UTERUS AND OVARIES, ELEVEN CASES.

All recovered. Malignant, two, both inoperable; ovarian cysts, two; fibro-miomata of uterus, seven.

One of the ovarian cysts was a large one, as they are met with today,—twenty-five pounds. The patient, a young girl seventeen years of age had been treated by a Christian Science healer until the size of the girl's abdomen began to be criticized by her neighbors. I cannot accept the teaching of many that a sufficiently lengthened incision should be made to deliver these tumors whole, the fear being that if opened before delivery the peritoneum may become contaminated if the growth should happen to contain papillomatous (malignant) material within it. In my judgment the incision should be made to suit the case. In this instance I made a three inch incision. If the sac is non-adherent or has been freed, then the fluid can be evacuated by trocar and cannula, without leakage. After two-thirds to three-fourths of the fluid has been removed, if side pressure upon the abdomen,

and traction by the Nelaton forceps closing the trocar opening, are made, the remaining fluid forces the sac out and the pedicle is dealt with without soiling, evisceration or even exposure of the viscera. If the tumor is multilobular and in part solid, the incision must be long enough to meet the condition.

All of the fibro-miomata were removed by supra-vaginal hysterectomy. Some were of large size and complicated by pus tubes and extensive adhesions. Several were operated upon by Doctors Keegan and Waters. One, a colored woman aged fifty, had a large tumor weighing twelve pounds. A part of the tumor was cystic and attached to the rest of the tumor, (pelvic part), by a narrow pedicle. In this instance I made an incision from the symphysis to the ensiform cartilage. The intestines were plastered to the growth by firm adhesions and much difficulty was experienced in freeing them. The woman most fortunately made an uneventful recovery.

SALPINGITIS, FOURTEEN CASES.

All recovered. Acute, nine. When such patients are kept quiet in bed, the diet restricted, the bowels kept gently open, and boro-glyceride wool vaginal tampons and hot douches used intelligently, the great majority recover without surgical interference and may bear children. It was found necessary to operate upon only three of these nine women.

Five chronic cases which, because of pain and invalidism were operated upon, all made satisfactory recoveries. There were three cases of pyo-salpinx, extensive in type as to pus accumulations and adhesions, which required operation,—recoveries uneventful.

(To be continued in the April number)

MEGACOLON (GIANT COLON)

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(Synonyms—Mega Sigmoid, Megacolon Congenitum, Congenital Dilatation of the Colon.)

Although much has been written upon the subject of congenital dilatation of the colon there is always a patent lack of exactness pertaining to the condition. A study of roentgenograms taken of constipated children nearly always shows a looped, twisted, redundant dilated and hypertrophied sigmoid which makes it impossible to say just what degree of distention constitutes a mild case

of megacolon. All constipated infants require the aid of a suppository, enema or laxative to secure an evacuation and abdominal protuberance is always noticeable. The lowered vital resistance is evident in that these infants develop slowly and seem to fall prey to the infectious diseases.

This condition was first described by Parry⁽¹⁾ in 1825, but the classical descrip-

tion given by Hirschsprung at the Berlin Congress of Children's Diseases in 1886⁽²⁾ first brought it to the general attention of the profession although many well authenticated cases have been carefully recorded before this date. Notable among these are the reports of Ebers, 1836⁽³⁾, Oulmont, 1843⁽⁴⁾, Banks⁽⁵⁾, Favalli⁽⁶⁾, Little and Galloway⁽⁷⁾, and Gay⁽⁸⁾. The first case reported in this country was by Lewitt⁽⁹⁾, followed by the reports of many others. Fisher⁽¹⁰⁾ has collected 206 reports.

CLASSIFICATION

Much difference exists in the classification of the various investigators according to their conception of the pathogenesis of the disease. Hirschsprung distinguishes two groups of cases.

1. Those seen at birth or shortly after (true megacolon).

2. Those which develop later about the time of weaning or toward the end of the first year of life, corresponding to the time of change in character of food.

3. Those cases occurring in adult life (pseudo megacolon).

This classification has been accepted by Graanboon⁽¹²⁾ and Lowenstein⁽¹³⁾, although others believe that since the process is a congenital one, it can manifest itself only in early life, and that those cases observed in adults are but aggravated cases of coprostitis.

Other observers believe that the condition, when it develops late in life, is but the delayed manifestation of a congenital defect which has existed all along and has been brought out by the atony of the bowels incident to the time of life.

ETIOLOGY

Very little is known as to the etiology of this affection and many theories have been advanced to account for the various manifestations. No single cause will explain every case. Barrington-Ward have grouped these factors into

A. Mechanical.

1. An abnormally long mesentery, permitting torsion of the sigmoid. Barth⁽¹⁵⁾ and later Gourevitsch⁽¹⁶⁾ have thought that an abnormally long mesentery might give rise to secondary torsion of the sigmoid. However, the unusually long mesentery has been found in but few cases.

2. Increased length of the intestine, especially the sigmoid which throws the bowel into loops and causes kinking and obstruction. Marfan⁽¹⁷⁾ and Neter⁽¹⁸⁾ believe the dilation and hypertrophy to be dependent upon the accumulation of gas and feces in the elongated looped portion of the colon.

Curschmann advanced the theory and is supported by Hirschsprung that the sigmoid in early life is relatively larger than the rest of the large intestine, and that we often find a persistence of the infantile condition which may at times become monstrous.

3. Atresia of the rectum and anus. Treves⁽¹⁹⁾ rejects the idea of idiopathic dilation and believes that mechanical obstruction together with accompanying hypertrophy explains all the phenomena.

4. Valve formation. Roser⁽²⁰⁾ and others have advanced the theory of a functional obstruction, due to the position of the affected bowel, by which a valve-like action is produced. Perthes⁽²¹⁾ reported a case where he was able to demonstrate a definite valve action just below the distended portion. Water injected through an artificial anus established above, would distend the bowel, but failed to pass through the valve, but when injected into the rectum, it would pass through the valve and out of the artificial anus. At operation he was also able to demonstrate the existence of the valve.

5. Distention of the pelvic colon with meconium at birth and valve action (Wilkie).

B. Neuropathic.

1. Neuromuscular defect of a segment of the intestine. Formad⁽²²⁾ suggested a neuromuscular defect of a segment of the bowel by reason of which the colon was unable to propel its contents, with a functional hypertrophy of the segment immediately preceding the paralyzed and dilated portion. Hawkins⁽²³⁾ has, therefore, proposed the title "Neuropathic dilatation and hypertrophy of the colon." Lennander⁽²⁴⁾ believes this is the most probable explanation of the condition.

2. Paralysis of a segment of intestine. Pennato⁽²⁵⁾ considers this the causative factor.

3. Bing⁽²⁶⁾ believes it to be due to a lesion of the sympathetics of the intestine.

4. Reflex spasm of the sphincters due to anal fissures. Fenwick⁽²⁷⁾ in a case was able to demonstrate a definite spastic contraction of the sphincter associated with fissure at the

anal margin. This theory has also been suggested by Hickens⁽²⁸⁾ and Gee⁽²⁹⁾.

Goebel⁽⁴⁵⁾ calls attention to the lack of evidence afforded by the excised intestine for the cause of the dilatation and hypertrophy of the colon, and, therefore, considered the possibility of presence of spasms either in the muscles of the upper colon or at the anus. The first possibility is excluded by the frequent continuation of the dilatation as far as the anal ring; the second assumption is supported by analysis of a number of Hirschsprung cases described since 1906. The data show that anal spasms may occur with such severity that they may be termed analogous to those that occur in cardiac and esophageal neuroses. The reflex irritation leads to lesions of a nature analogous to those of the colon in the Hirschsprung complex; and the local spasms of the sphincter at least may be designated as a contributing cause of the colon manifestation. Treatment, therefore, should aim to combat the tendency to spasm.

C. Inflammatory:

1. Colitis becoming chronic.

Walker and Griffiths⁽³⁰⁾ advance the theory that first a colitis occurred and becoming chronic, great distention followed from the altered chemical changes in the feces with gas production. The distention renders peristalsis difficult and is compensated for by hypertrophy of the muscle fibers.

D. Congenital.

1. Anomaly of development—dilatation and hypertrophy congenital. Hirschsprung⁽³¹⁾ considers both the dilatation and hypertrophy to be due to morbid processes acting during fetal life.

2. Dilatation congenital, hypertrophy secondary. Mya⁽³²⁾ believed the hypertrophy to be secondary and not a part of the original process. This view has been substantiated by others. Billard⁽³³⁾.

Concetti⁽³⁴⁾ described a case with congenital aplasia of the muscular tissues of the larger intestine, immediately above the rectum, which he believed was the primary lesion and as a result of later fermentation and putrefaction with gas formation these resulted in a stretching out of the bowel. In this expanded position large quantities of feces accumulated.

Later from efforts of the bowel to overcome this stagnation there results marked hypertrophy of the segment immediately

above. This he believes to be a true hypertrophy, i. e., enlargement of the existing muscle fibers and the development of new ones.

3. Hypertrophy congenital, dilatation secondary, Genersich⁽³⁵⁾

From the study of this group it seems likely that the dilatation and hypertrophy are not necessarily associated but either may be congenital with the other as secondary or they may coexist independently of each other.

Finney⁽³⁶⁾ reports a case in which the hypertrophy resembled a lymphangiectasis, the most striking features being immense size of the colon and thickening of the mesocolon which was composed chiefly of enlarged lymph glands and enormously dilated lymph and blood vessels. The dilatation of the lymphatics and vascular systems in the mesocolon correspond exactly with the dilated segment of the bowel. The whole appearance of the dilated and hypertrophied bowel suggested hypernutrition, a species of giantism. Cases have been reported in which the bowel has been thin and attenuated instead of thickened.

The pathological changes in the structures involved are not constant and many etiological factors may contribute. Marchand⁽⁴³⁾ concludes that hindrance to evacuation or peristalsis if originally present might lead to dilatation, which, making effective peristalsis more difficult induces hypertrophy and the other changes noted thus inaugurating a vicious circle.

Congenital megacolon is three times as frequent in boys as in girls. Occasional instances are reported of megacolon first causing symptoms in adult life but Bassler⁽³¹⁾ believes that even when a large dilatation is met with the condition should probably be looked upon as secondary to some pathology and even in that sense it is not an idiopathic dilatation but is secondary.

Practically all cases are met in the first year of life because of the greater mobility of the colon at this time and its tendency to angulate or twist on its axis. Occasionally patients are seen at early adult life who have had symptoms dating from birth or soon afterward. These can be classed as congenital.

The clinical picture is usually very pronounced. The abdominal distention may be observed at birth, and it may be so enormous as to interfere seriously with delivery. Hobbs and de Richmond⁽³⁸⁾. The en-

largement is due to distention of the dilated portion of the colon with gas and feces. The abdomen is rather barrel shaped, its greatest circumference being somewhat above the umbilicus. The distention may be so extreme that the peristaltic waves of the intestines can be seen and the distended intestinal coils seen or felt upon one side or the other.

The skin over the distended abdomen is tense and glossy, which is quite in contrast with the dry sallow appearance of the skin of the face. The veins over the abdomen are large and prominent.

The distended intestine continuously pushes up the diaphragm until it is almost horizontal, thus rendering the costal angle wide and obtuse instead of its normal approximately vertical position. A separation of the recti muscles may occasionally be present.

On palpation hardened fecal masses may sometimes be felt and at other times the abdomen is soft, but at all times it is free from pain.

On percussion the abdomen is everywhere tympanitic, the areas of liver and splenic dullness being much reduced. Audible borborygmi frequently occurs.

Obstinate constipation is always a definite symptom, the first passage of meconium may be delayed for two or three weeks. In other cases the constipation may be noticed only after the child is weeks or months old. The fecal material accumulates in such quantities as to cause fecal tumors, especially in the sigmoid. Under these circumstances, a movement of the bowels is obtained with difficulty. It may be relieved spontaneously by the expulsion of great masses of fecal material, although usually it yields only to enemas or mechanical stimulation. The periodic emptying of the bowel may continue for three or four days during which time the evacuations may be diarrheal and afford some degree of relief. Most unusual postures are assumed by the individual during defecation, such as leaning over the back of a chair, standing on the head, and knee chest position. The extreme difficulty in producing an evacuation is one of the characteristics of the disease.

As the bowel empties itself of this accumulation the abdomen flattens out and its walls become very flabby. For a while the child is relieved of his toxemia, the appetite is good and the patient appears well, but

shortly the enormous distention recurs, the veins on the abdomen become prominent, the legs are flexed on the abdomen, the skin is dry, the face pinched and the child cries periodically.

Sometimes there are long intervals between attacks and the patient may be made comfortable by the use of purgatives and enemas but the relief is only temporary, the abdomen never entirely reaching its normal dimensions. The stools are of clay-like consistence and have a foul odor.

After this free fecal discharge constipation recurs and it is during this constipated period that the abdominal distention recurs. Almost incredible intervals occur before the next evacuation; Johanessen⁽³¹⁾ reporting six weeks, Rolleston and Hayward⁽¹¹⁾ nine weeks, Gay⁽⁴⁰⁾ three months.

The general appearance of the patient is quite in contrast to the distended abdomen, the facies is dull, apathetic, the skin elsewhere on the body is dry and harsh and the whole picture is that of emaciation, auto-intoxication and sometimes tetany.

Rectal examination is usually normal. Some investigators have found the sphincter spasmodically contracted but the majority of observers have failed to note any abnormality. The rectum is usually empty and its walls are either normal or somewhat ballooned. A rectal tube can usually be passed and may evacuate a large quantity of liquid feces and gas.

The lungs are encroached upon by the upward pressure of the diaphragm and displaced liver. Breathing is largely costal and dyspnoea seriously disturbs the sufferer.

The heart action becomes weak and irregular.

The kidneys are not disturbed although occasionally an associated disturbance may be present.

Chronic insanity has been noted to frequently occur with dilatation of the colon. Van der Kolk quoted by Hurd⁽⁴¹⁾.

PATHOLOGY.

The usual site of the pathological process is the large intestine. In more than one-third of all cases the sigmoid flexure alone is involved, but typical cases have been reported which involved the transverse colon only. The whole of the large intestine is involved in about fifteen per cent of the cases. In aggravated cases the cecum or the rectum may be distended and in contrast exceptional cases

are reported where but a small segment of the colon is dilated without involving the sigmoid.

The small bowel is not involved even when the colon has tremendous fecal retention. Ladd⁽⁴⁶⁾ has always found the mesocolon unduly long but without the extreme thickening mentioned by others.

The change in character of the bowel from normal to dilated colon is usually sharply marked and from this reasonable dilatation to the abnormal stretched condition, there is a more gradual change. Sometimes, but not always, there is an apparent mechanic obstruction at the point of beginning dilatation. These demonstrable obstructions are more definite in the adult type of disease. Perthes classes all such cases as pseudo-megacolon, reserving the congenital idiopathic type to those in which no definite mechanical obstruction can be demonstrated at operation or autopsy.

When the abdomen is opened, the colon, perhaps six inches in diameter, fills the entire cavity, displacing all the other abdominal contents. Terry⁽⁴⁷⁾ reports a case in which the sigmoid was 19 cm. (7½ inches) in diameter.

Peritonitis may be present as a result of necrosis of the intestinal wall. In Finney's case there was quite a uniform hypertrophy of all of the intestinal tissues, especially marked, however, in the muscularis. Grafted, as it were, on this hypertrophy are many degenerative changes, probably due to the large, retained fecal masses.

Finney presents the following interesting table comparing the measurements of the different bowel tissues in a normal well distended colon and in several other cases.

Cases	Mucosa mm.	Muscularis mm.	Sub- Mucosa mm.	Circular Muscles mm.	Longitudinal Muscle mm.	Serosa mm.	Total
Normal colon	.290	.017	.320	.170	.050	.005	.850
Mya	.055	.22	.55	.33	.035	1.605	2.695
Concetti	.513	.105	1.398	.447	.447	.057	2.52
Finney 2 different area	.520	.050	.220	.750	.200	.020	1.77
	.500	.075	.900	.450	.200	.037	2.16
MacCullum Reported by Finney	.350	.125	1.025	1.670	.375	.010	3.53

DIAGNOSIS

The diagnosis is usually easily determined by the classic symptoms chronic constipation and enormous abdominal distention.

In children mild cases may be confused with rickets or malnutrition and although the emaciated extremities and anxious but sallow expression are found in both, the enor-

mous meteorism occurs only with megacolon.

In adults tuberculous peritonitis, chronic volvulus, carcinoma of the intestine, dysenteric ulceration and ovarian cyst are to be considered.

In differentiating tubercular peritonitis from megacolon the fact that ascites has never been found in megacolon will be of some aid.

The disease makes its appearance during early infancy. Finney says seventy per cent occurred immediately after birth and about twenty per cent within a few days or weeks. The fact that children who have suffered from constipation from birth frequently do not consult a doctor until some years later may account for many of the milder cases never being recognized. An enema given to the child will often bring back an unbelievable quantity of feces.

A barium enema given with the child inverted or in the knee chest position may show



Figure 1. Rentgenogram of our own case of megacolon which shows the enormous distention of the bowel.

a good x-ray illustration (figure 1). A roentgenogram with a metal tube inserted into the rectum may also aid in determining the location of the affected segment of bowel.

PROGNOSIS

The prognosis is always uncertain. Some cases have been reported in which patients succumbed in a few weeks, Pfisterer⁽⁴²⁾, but usually the patients lead a precarious existence for several years, always being undernourished and suffering with digestive disturbances. Intercurrent disease such as peritonitis, the result of perforation or rupture

of the bowel, volvulus, acute intestinal obstruction, heart failure, bronchitis, or broncho-pneumonia frequently cause the patient's death. The majority die before the sixth year and ten years appears to be an unusual survival.

TREATMENT

The treatment of megacolon embraces many medical and surgical procedures and no one treatment yet discovered is always successful. These infants do not stand surgery well and their treatment must usually be palliative until the child is at least one year old.

MEDICAL TREATMENT

In a small portion of the cases a practical cure may be obtained by the usual medicinal measures employed for the relief of chronic constipation, namely, regulation of the diet, frequent regular irrigations of the bowel in an effort to prevent the accumulation of fecal matter and gas. Cathartics are not at all satisfactory. One-half to one ounce of mineral oil given half an hour before each meal helps lubricate the fecal mass as it passes through the colon. Massage of the colon at the time the flushing is given helps to "milk" the secretions along the bowel. The possibility of rupturing the bowel during these maneuvers must always be kept in mind. Meyers⁽⁴⁸⁾ reports one case in a child aged 4 years, which was diagnosed both clinically and with the aid of the Roentgen ray. Constipation dated from infancy and had been persistent. All sorts of drugs were tried, but no attention was given to the preponderance of starch in the diet. Assuming that spasm was playing a role in this condition, the child was put on increasing dosage of atropin, starting from 5 drops of a 1:1000 solution, until the child complained of dryness of the mouth. Gradually, well done toast, cooked fruit and green vegetables were added to the diet and the atropin was decreased. The constipation ceased after the spasm was relieved and normal defecation followed. Five other similar cases are cited in which the starch free diet and atropin yielded equally good results.

The success of medical treatment will depend largely upon the tonicity of the colon and the contraction of the lumen to a nearly normal size. When, however, there is a definite obstruction which causes the dilatation, or medical treatment fails after a reasonable trial, surgical procedures must be instituted.

SURGICAL TREATMENT

A few cases have been cured by dilatation

of the rectum, division of the rectal valves or the removal of tumors which pressed upon the rectum, but most cases require direct treatment to the dilated colon.

Colostomy, often a cecostomy as a safety valve or as a preliminary step to a more radical operation is a very valuable aid at which time a careful complete diagnosis may be made and the contents of the bowel may be evacuated. The colostomy opening should be made in healthy bowel above the dilated segment. After this portion of the bowel has been relieved of its impacted feces and has recovered somewhat its normal size, the second step of the operative procedure consisting of a lateral entero-anastomosis between the segments immediately above and below the distended portion may be performed.

After a cecostomy has been performed and a tube tied in, the abdominal wound may be closed about the tube. Daily irrigations of salt solution are now given through the colostomy opening and per anum. From time to time as fecal masses become retained they may usually be removed by massage of the abdomen at the time of irrigation.

Following the establishment of an artificial anus these little sufferers promptly build up, some seem to make miraculous improvement and for a considerable time they may be made very comfortable, but are not content to go through life in this condition and a short circuiting operation will be demanded.

Entero-anastomosis without resection has given good results in many cases, especially if colopexy is added to lift up the sigmoid and fasten it so as to eliminate kinks, but sometimes the excluded bowel fills and packs with fecal matter.

Resection of the affected segment with entero-anastomosis is the operation of choice, other things being equal. The anastomosis to be made depends upon the conditions found in the particular case, but as a rule ileosigmoidostomy or a colocolostomy close to the rectum will be demanded. In a few cases severe diarrheal troubles result when the ileum is joined to the rectum.

During the resection of this enormous bowel it will be found that the ordinary intestinal clamps are not large and strong enough to hold the bowel and must be replaced by large sized stomach clamps. Lateral anastomosis is much better technic than end to end because of the disparity of size between the upper and lower segment.

Johnson⁽⁴⁹⁾ reports a case of megacolon involving the cecocolon. A sigmoidectomy was done with end to end anastomosis between the descending colon and the rectum. As the open end of the rectum was fully 9 inches across, the posterior 4 inches were closed and the union was made with three rows of chromic gut sutures. The patient made a remarkable convalescence. He is entirely free from all of his previous symptoms.

Upon completion of the anastomosis a rectal tube should be introduced through the anus and up through the anastomosis. The visceral displacement attending the abdominal distention of these cases seriously affects the functioning of these organs and impairs their vitality. In the case reported by Carnot and Friedel⁽⁴⁴⁾ the enlargement of the intestine at the left flexure of the colon had pushed the heart over to the right side and displaced also the stomach, spleen and liver. The megacolon was resected, and the displaced organs slid back into place, but this induced such disturbance in the circulation that the man of 55 succumbed to a fatal syncope the next day. The case teaches the necessity for impeding the sudden return of displaced organs after resection of the megacolon.

Lowenstein⁽¹³⁾ in his table of comparative results of treatment gives the following statistics:

Cases Treated	Medical—59	Surgical—44
Mortality	39 66 per cent	21 48 per cent
Improved	9 11 per cent	7
Unimproved	4	2
Cured		15 34 per cent

My own case, illustrated in figure 1, was seen with Dr. Julius Bernstein and gave the following history:

Mrs. N., a primipara went into labor May 20, 1917, at 4:00 p. m., pains 10-12 minutes apart, taken to delivery room at 3:30 a. m., on May 21st.

Delivery of an incomplete frank breech at 7:50 a. m., male child. Babe at birth weighed 7 lb. 1 oz. On the second day after delivery the baby vomited a large amount of clear mucus.

On the third day the abdomen became distended. The skin of the abdomen became coarsed with dilated veins, and upon palpation of abdomen, especially upon left side in the region of the sigmoid flexure, great tenderness was elicited. The temperature at this time was 98. The babe was given a normal salt enema which returned with a large amount of meconium. On the fourth day in the morning, abdomen was softer, distention was not quite so great and palpation did not cause so much discomfort. The evening of the same day, the abdomen was very much distended and the babe was restless. There was great pain on the slightest pressure, and the babe vomited a large amount of green emesis with curdles of milk.

A diagnosis at this time was made on the disten-

tion, no spontaneous defecation, tenseness of abdomen, dilatation of veins, the large amount of meconium expelled. A normal salt high colonic flushing was given, which returned with a large amount of meconium, no flatus being expelled. Pituitrin M2. Still the abdomen was quite distended. Another flushing was given which also returned with good results. The babe now started to expel flatus at intervals. The distention of abdomen was somewhat improved. The temperature was 98-6. The baby rested well. On the fifth day, the babe was taken to the x-ray room where a bismuth enema was given, and the diagnosis confirmed. During this time the babe nursed well, treatment being an enema morning and evening. Mother and babe were dismissed on the 11th day, the infant weighing 6-13½.

REFERENCES

1. Parry—Collections from the Unpublished Medical Writings of the late C. H. Parry, London, 1825, Vol. II, p. 380.
2. Hirschsprung. (a) *Jahrb. f. Kinderheilk.*, 1888, Vol. XXVII. p. 1. (b) *Festschrift f. Henoch*, 1890, p. 78; (c) *Berliner Klin. Wochensch.*, 1899, No. 44; (d) *Hospital Stridende*, 1899, No. 7; (e) *Traité des Maladies de l'Enfance* Grancher & Comby, Tome II, Paris 1904.
3. Ebers—*Hufelands Jour.*, 1836 LXXXIII. p. 62.
4. Oulment—*Bull. de la Soc. Anat. de Paris*, 1843, Vol. XVII, p. 336.
5. Banks—*Dublin Quart. Jour. Med. Sc.* 1846, Vol. I, p. 235.
6. Favalli—*Gas. Med. di Milano*, 1846, Vol. V., p. 213.
7. Little & Galloway—*Trans. Path. Soc.* 1850 Vol. III, p. 106.
8. Gay—*Trans. Path. Soc.* 1854, Vol. V, p. 174.
9. Lewitt—*Med. Jour. of Chicago*, 1867, Vol. XXIV, p. 359.
10. Fisher—*Pediatrics*, May 1891.
11. Rolleston & Hayward—*Trans. Clin. Soc.*, 1896 Vol. XXIX, p. 201.
12. Graanboon—*Nederlandsch Tijdschrift voor Geneeskunde* 1905, p. 442.
13. Lowenstein—*Central bl. f. Allg. Path.* 1907, Vol. XVIII, p. 929.
14. Barrington Ward—*Brit. Jour. of Surgery*, 1914, I, p. 345.
15. Barth—*Wagner's Archiv. d. Heilk.* XI, 1870, p. 119.
16. Gourevitch—*Prager Med. Wochensch.* 1904, Vol. XXIX, p. 607.
17. Marfan—*Rev. mens. de Maladies de l'Enfance*, 1895, Vol. IV.
18. Neter—*Archiv. f. Kinderheilk.* 1901, Vol. XXXII, p. 232.
19. Treves—*Intestinal Obstructions*, N. Y. 1902, p. 242.
20. Roser—*Verhand. des 4th Chir. Congress*, Berlin. 1875, p. 73.
21. Perthes—*Archives f. Chir.* 1905, Vol. LXXVII, p. 1.
22. Univ. Med. Mag. Phila., 1892, Vol. IV, p. 625.
23. Hawkins—*Brit. Med. Jour.* 1907, Vol. I, p. 477.
24. Lennander—*Nord. Med. Archiv.*, 1900, Vol. XI.
25. Pennato—*La Clinica Med. Ital.* 1902, p. 13.
26. Bing—*Archiv. f. Kinderheilk.*, 1906, Vol. XLIV, p. 59.

27. Fenwick—Brit. Med. Jour., 1900, Vol. II, p. 554.
28. Hickens—Lancet, 1898, Vol. II, p. 1121.
29. Gee—St. Barthol Hosp. Reports, 1884, Vol. XX, p. 19.
30. Walker & Griffiths—Brit. Med. Jour., 1893, Vol. II, p. 230.
31. Roth—Archiv. f. Clin. Chir., 1906, Vol. LXXXI, p. 125.
32. Mya—Lo Sperimentale Sex Biolog., 1894, p. 215.
33. Billiard—Die Krankheiten d. Mengeborenen u. Sanglinge Weimer, 1829-37, p. 331.
34. Concetti—Bull. del. R. Acad. Med. di Roma, 1898-99, Vol. XXV, p. 787.
35. Genersich—Jahrb. f. Kinderheilk, 1893, Vol. XXXVII, p. 91.
36. Finney, J. M. T.—Surgery, Gynecology & Obstetrics, June 1908, Vol. VI, p. 624.
37. Bassler—Diseases of the Intestine & Lower Alimentary Tract, (F. A. Davis Co., publishers).
38. Hobbs & de Richmond—La Medicine Moderne, 1898, Vol. IX, p. 652.
39. Johannessen—(a) Norsk Magazin Largevidenshaben, 1900, Vol. XV, p. 276 (b) Revue mens, des Malad. de l'Enfance, 1900, p. 65.
40. Gay—Trans. Path. Soc., 1854, Vol. V, p. 174.
41. Hurd—Johns Hopkins Hospital, Bull. 1893, Vol. IV, p. 42.
42. Pfisterer—Jahrb. f. Kinderheilk, 1907, Vol. LXV, p. 160.
43. Marchand—(a) Muchener med. Wochensch, 1903, p. 351. (b) Sitzungsbericht der Leipziger, Gesellschaft, an 20, January 1903.
44. Carnot & Friedel—Archiv. Des Maladies de L'Apparil Digestif, Paris, Sept. 1920, No. 10, p. 577.
45. Goebel—Mittheil a. d. Grenzgebieten d. Med. u. Chir. Jena 1920, No. 4, p. 498.
46. Ladd, W. E.—Boston Med. & Surg. Jour. Jan. 27, 1921, p. 81.
47. Terry—Jour. A. M. A., Aug. 26th, 1911, Vol. LVII, p. 731.
48. Meyers, A. E.—Amer. Jour. of Dis. of Child. Mar. 1920, p. 167.
49. Johnson, P. P.—Boston Med. & Surg. Jour. Jan. 27, 1921, p. 88.

THE USE OF INSULIN IN THE TREATMENT OF DIABETES.

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The following report is based upon the experience gained in the treatment of 38 cases of diabetes seen since March 1, 1923.

Before considering the role of Insulin in the treatment of the diabetic it would be well to consider the principles underlying the dietetic management of a diabetic patient for a regulation of the diet must still remain the mainstay in the attack upon this disease.

Up to 1914 the treatment of diabetes was notoriously unscientific. In December of that year Allen ⁽¹⁾ published his work on total dietary restriction in the treatment of the diabetic. Allen believed that a rational therapy for diabetes had as its main function the sparing of the pancreatic hormone and by sparing this hormone, by a lowering of the caloric intake, a tolerance might be built up. This principle has been abundantly proven clinically by physicians the world over. The principle was shown to be sound by the observations of Magnus Levy ⁽²⁾ in Germany, where due to over-nutrition, diabetes had definitely been on the increase before the war, the incidence was markedly reduced during the period of the war on the marked restriction of the diet that was necessary during those days.

Allen has shown that by total dietary restriction the metabolic rate may be lowered

from 15% to 20% and the beneficial influence of this depression of metabolism upon the severe diabetic has been shown by Wilder, Boothby and Beeler ⁽²⁾.

The second principle, consists in the restriction of the carbohydrates. It has long been known that diabetes consisted in an inability of the organism to properly metabolize carbohydrate food. The principle of rest strengthening a weakened function is sufficient reason for a restriction of carbohydrate intake.

The third principle is a restriction of protein foods. It has been shown by Woodyatt ⁽³⁾, Schaffer ⁽⁴⁾ and others that protein stimulates body metabolism and that a diet low in proteins that provides calories 20 per cent below the basal needs will depress the metabolic rate 15 to 25 per cent. A limitation of the protein on account of this specific dynamic action is, therefore, indicated. A second reason for the limitation of protein is that, as has been shown by Woodyatt, ⁽³⁾ 58 per cent of protein molecule becomes, when metabolized, available glucose. Large amounts of protein, therefore, lower tolerance by straining a diseased function. Hence the basic principle of limitation of protein food is a reasonable one. Protein given in the amount of two-thirds of a gram to one gram per kilo for the average adult is sufficient

to maintain him in nitrogen equilibrium. Children, however, require higher protein values. from 2 to 3½ grams per kilo. (Geyelin) ⁽⁵⁾.

The fourth principle consists in the balancing of ketogenic and antiketogenic substances in the diet. It has long been known that "fat burns in the fire of carbohydrate" and that excessive amounts of fat in some diabetics predispose them to acidosis. It has been shown by Woodyatt ⁽⁴⁾ that 58 per cent of the protein molecule becomes glucose and 10 per cent of the fat molecule becomes glucose; that 46 per cent of the protein molecule becomes fatty acid and 90 per cent of the fat molecule becomes fatty acid during the process of metabolism. Woodyatt contends that when the ratio of ketogenic substances (fatty acid) to the anti-ketogenic substance (glucose) exceeds 1.6 to 1 acidosis is imminent.

In considering the diabetic patient's diet, therefore, we must think of that diet in terms of G (total glucose) and FA (fatty acid) rather than in terms of carbohydrate, protein and fat. This principle has been soundly established but it has been found by Newburgh and Marsh ⁽⁷⁾ that higher values of fat may be used and that ratios of 1 molecule of glucose to 2½ to 3 of fat may in some cases be safely used.

To sum up, in the dietetic management of every diabetic patient we must first, restrict his carbohydrate; second, a total dietary restriction; third, a restriction of his protein, and fourth, balance the diet, adding or subtracting fat, depending upon evidences of acidosis as manifested by ketonuria. We have attempted to follow these principles in the care of the cases here reported.

The amounts of the various types of food may be worked out by applying the following formulae. Basal maintenance diets may be arrived at by means of Aub-DuBois tables (Wilder) ⁽⁹⁾. Allowing M to stand for the total calories needed for the maintenance of the patient at rest and allowing the individual 2/3 of a gram of protein per kilo. by the use of the following equations ⁽¹⁰⁾ the carbohydrate and fat values may be arrived at:

$$C = \frac{M - 10P}{30} \quad \text{and} \quad F = \frac{M - P}{10 - 2}$$

These values will give a ratio of approxi-

mately 2 FA to 1 G and this ratio may be raised by adding fat or lowered by adding carbohydrate.

The procedure that we have followed in the cases in this series has been as follows: The basal maintenance diet (B. M. D.) for the patient depending upon age, weight, height, and sex, has been determined by means of the Aub-Du Bois table, or roughly in the absence of the table 26 calories per kilo. The patient is placed upon a diet, slightly below B. M. D., balanced as above, for 48 hours. The total G is estimated for this diet. The number of grams of sugar passed in the second 24 hours subtracted from the total G has given this patient's tolerance. If no sugar is passed upon this diet the total G is raised each day to determine tolerance.

The larger proportion (between 80 and 90 per cent) of diabetic patients may be cared for by the use of the principles enumerated above. The patients will not only become sugar and acetone free but will gain in tolerance as a result of the rest given to the pancreas. There is, however, a group of patients, (ten to twenty per cent) whom it is impossible to maintain and keep sugar free upon dietetic treatment alone. For this group insulin is indicated. Insulin has long since passed the experimental stage and the indications for its use are definitely marked out. It may be roughly stated, however, that a patient who can take a hundred grams of total glucose and 2500 calories does not need insulin. Some authorities, however, believe that if we expect to heal a diseased pancreas by rest, insulin is indicated in a much larger proportion of patients, given almost to the stage of causing a hypo-glycemia, in order to completely rest this organ. In the young diabetic, or in a diabetes of recent development in whom there is hope of island regeneration this would be particularly true.

INDICATIONS FOR INSULIN.

I. The first type is the severe case with low tolerance and a high degree of ketonuria. The effect of insulin upon this type of case is well exemplified by the following history:

L. H. B. age 22, B. M. D. 1480 calories. In the first 24 hours under observation he passed urine containing 3.3 per cent sugar, 3 plus acetone; 3 plus diacetic, a total of 66 grams of sugar, with a blood sugar of 350 milligrams.

He was put upon a diet of P 28; F 136; CH 20; total G 49; ratio 1 to 2.7. On this diet the sugar

dropped in the third 24 hours to 25 grams, his tolerance being 24.

Two ways of determining insulin dosage may be used in this type of case. The first to assume that one unit of insulin metabolizes 2 grams of sugar; the second, starting the dosage known to be below that point and working up. That procedure was followed in this instance and this individual was given eight units of insulin in two doses per day, was sugar free on the third day. The diet was gradually built up and for every two grams of glucose added one unit of insulin was given. He was under observation for 22 days and left with a total G of 69, urine sugar and ketone free, insulin dosage 20 units per 24 hours. His tolerance, assuming that 1 unit of insulin will take care of 2 grams of glucose, was 29. Since going home he has kept himself sugar free and has built up his tolerance.

ticularly important that the diseased cells be given a chance to regenerate. It is in this type that hope may be held out that, with the proper use of insulin and diet, these cases may possibly be cured of the disease, if the treatment is continued sufficiently long to give the pancreas time to regenerate its diseased cells or allow normal cells remaining to accommodate themselves to the added load. In the treatment of the juvenile diabetic it must be remembered that higher protein values must be used and a diet giving at least 25 per cent more calories for the same height and weight is necessary. Juvenile diabetics need only one-half the dose of insulin necessary for the adult dia-

E. C., colored, male, 49, weight 51 kilos, severe diabetic. Showing effect of insulin upon blood sugar, urinary sugar, ketones.										
Date	Wt.	Acetone	Di-acetic	Urine %	24 Hr. Grms. Sugar	Total G	Tolerance	CO2	Insulin	Blood Sugar
1/9/24	114	2+	0	7.1	56.8			52	0	525
10		2+	0	7.1	56.8				0	270
11		2+	0	3.8	30.4	53	22.6		0	223
12		2+	0	3.3	36.3	50			0	216
13		2+	0	2.1	21.	50			12	210
14		Lost Specimen				50			12	
15	114	+	0	.4	3.	50			12	126
16		+	0	0	0	50			19	
17		+	0	0	0	70			19	130
18	117	+	0	0	0	70			24	110
20		+	0	0	0	93			28	120
23		0	0	0	0	134	62		36	114
2/10	121	0	0	0	0	140			18	

Chart I

Chart No. 1 shows effect of insulin upon a severe diabetic in whom tolerance was raised more rapidly.

betic of equal severity and insulin must be administered to them with great care, for, on account of the lower blood volume, hypoglycemic reactions are more liable to occur.

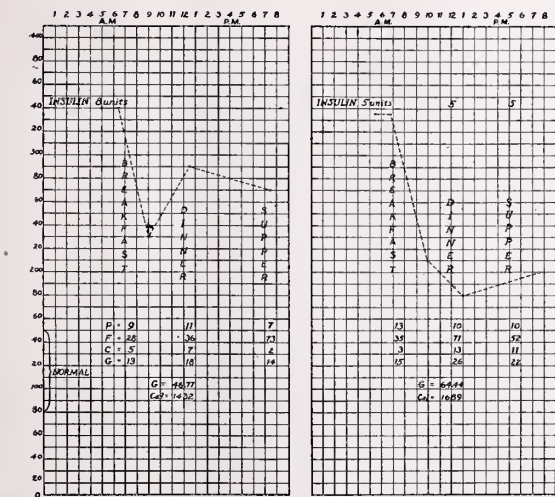


Fig. 1—Showing blood sugar curve as a result of one injection of insulin per day and 3 injections per day.

II. The second type of patient in whom insulin is indicated is the juvenile type of diabetic in whom the mortality before the advent of insulin was almost a hundred per cent. In juvenile diabetes it is par-



R. B. M. M.

We have used insulin in three diabetic children, MM-MK-RB. The results are shown in the accompanying diagrams. All three of these children when first seen were under-nourished, were carrying large amounts of sugar acetone and diacetic

acid. Mentally all three of them were low spirited and very unlike normal children. The change in them physically and mentally was very gratifying.

The progress of M. M. is shown graphically by Fig. II, and chart No. II. Shortly after leaving the hospital this child developed a severe scarlet fever and the tolerance promptly dropped. No at-

urine: sugar, acetone and diacetic, negative. Blood sugar 120. Weight 76. No insulin. Tolerance 231 grams. This patient has been followed carefully for six months and was given insulin intermittently when sugar would appear as a result of "cold-taking" or dietetic indiscretions.

III. It has long been known that infec-

M. M. 11. B. M. D. 1150.				Blood Sugar	Grms Urine Sugar	Tolerance	Insulin
	Wt.	G	Ratio				
8/14/24	53	31	1-2.6	330	80		10 Day of entrance
8/15/24	53	41	"		18	3	10
8/16/24		48			12	16	10
8/31/24	60	94	1-2.1	180	0	82	6
9/17/24	63	124	1-1.7		0	100	12
9/20/24	63	135		140	0	140	0
10/28/24	61½	52	1-2.6	93	17	15	10
10/31/24	63¾	65	1-2		0	55	0
10/ 8/24		141	1-1.4		0	141	0
2/ 1/24	73	130			0		0 At home

Chart II

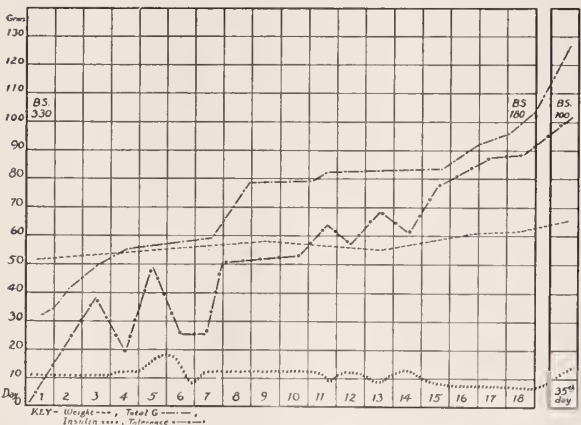


Fig. II—Showing gain in tolerance—juvenile diabetic, M. M. Age 11, weight on entering 51 pounds. Assuming that 1 unit of insulin metabolizes 2 grams of glucose. The further progress of this case is shown in Chart No. II.

tempt was made to keep the urine continuously sugar free throughout the course, for the patient was given high carbohydrate values in the form of orange juice etc., and insulin sufficient only to control acidosis was administered. She made an uneventful convalescence and in a short time had regained her tolerance. At the present time she is going to school, weighs 20 pounds more than when first seen, and can be kept sugar free on diet alone.

M. K. Age 7 Figure No. III, a more severe diabetic whose sister and uncle had recently died of the disease was rendered sugar, acetone and diacetic acid free in 13 days. The change in the mentality and the gain in tolerance in the child was very marked. This child also developed scarlet fever and was handled in same manner as M. M.

Raymond B. age 13, wt. 65 lbs., first seen June 20, 1923. Duration from history, unknown; but there had been weakness for six months, polyuria and polydpsia for three weeks.

Urine: 1.1% sugar, acetone +, diacetic 0, blood sugar 182 milligrams. January 12, 1924,

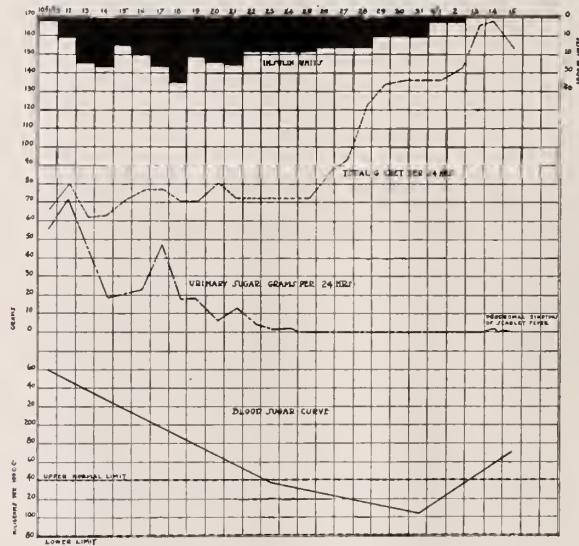


Fig. III—Case of M. K., 7 years. B. M. D. Aub-DuBois table 1350 calories—Showing (1) Effect of insulin upon urinary sugar and blood sugar. (2) Gain in tolerance. (3) Loss of tolerance as illustrated by return of urinary sugar and rise of blood sugar, following the advent of symptoms of scarlet fever.

tion occurring in a diabetic patient markedly reduces his tolerance and predisposes him to acidosis. Fig. IV. Large doses of insulin are necessary to keep these patients sugar and ketone free. In this series of cases we have used insulin in two cases of scarlet fever; one case of acute appendicitis with operation; two carbuncles; one discharging middle ear; one pyelitis; one tuberculosis, and in all have been satisfied with the results. In the acute infectious diseases, it is extremely difficult to keep the patient sugar free on account of the difficulty of administering the proper diet.

IV. Operative Cases. Diabetic patients have always been considered poor surgical risks. The shock of operation plus the anesthetic have markedly lowered their tolerance and the patient has gone through the operation only to subside into a coma and die. Our experience has been limited to the use of insulin in one case of acute perforating appendicitis that was operated upon and the urinary report showing sugar was not given to the surgeon until the abdomen was open. The patient, immediately following the removal to his room was given 25 grams of glucose by rectum and 15 units of insulin given in five unit doses throughout the day. The second day the urine showed sugar but no ketone bodies, blood sugar 180. He made an uneventful convalescence, upon a low calory diet with a total G of 55 and no insulin.

In preparing a diabetic patient for operation it is essential that the liver be filled with glycogen. The normal liver can store from 150 to 200 grams of glycogen and the patient should be given before operation, sufficient glucose to fill the liver, and sufficient insulin to store it in the form of glycogen and also render him ketone free. The glycosuria may be cared for later. If the liver is filled with glycogen before the operation, he can burn his fat properly and the danger of acidosis is markedly diminished.

V. Gangrene Cases. The patient with a diabetic gangrene has an extremely high tolerance for insulin and its use in this type of case is disappointing. When one considers that most cases of diabetic gangrene are due to blood vessel changes, it is too much to expect that insulin will have any specific effect. What insulin does do, however, in these cases is to lessen the possibility of infection complicating the gangrene. According to Allen ⁽¹¹⁾ healing in all cases of his series has been no different than previously obtained by diet alone.

Figure V, shows the effect of diet upon the urine and blood sugar of a case of diabetic gangrene involving the left small toe. While this patient was sugar free on this diet, she developed gangrene of the plantar surface of the great toe. Her blood sugar, however, was constantly above the normal limit and beginning with the onset of the second gangrenous spot insulin was given to keep the blood sugar down to normal. Up to date it has had no particular effect upon the gangrenous area. Blood sugar determi-

nations are important in the treatment of all types of diabetes, as this case well illustrates. It is well known that there is no parallelism between the blood sugar and ur-

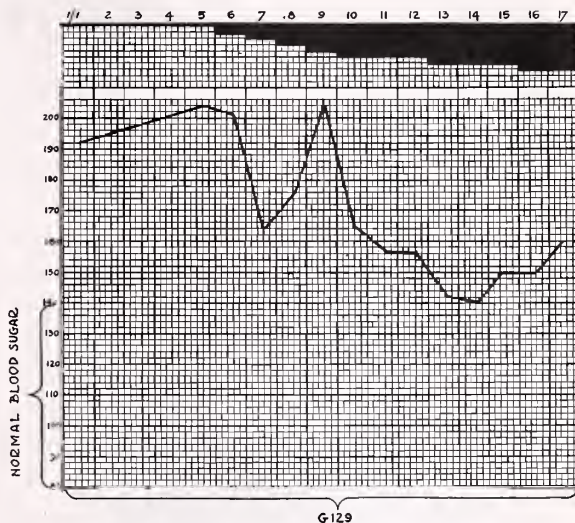


Fig. V—Mrs. B. Age 65—Diabetic Gangrene. On total G of 129. No insulin. Patient's urine sugar free for weeks up to January 1st, 1924. Blood sugar high.

Case illustrates (1) Fact that there is no parallelism between urinary sugar and blood sugar. (2) Rendering sugar free and bringing blood sugar toward normal has not to date affected gangrene. (3) Difficulty of determining dosage of insulin necessary to keep blood sugar normal. (4) High tolerance for insulin in gangrene cases.

Upper squares represent 2 units of insulin per square.

inary sugar. The blood sugar concentration which must be reached before urinary sugar appears differs in different individuals at different times. This discrepancy is particularly apt to be very marked in gangrene and coma cases. The kidneys seem to acquire considerable impermeability to sugar in some individuals. Liefman and Stern ⁽¹²⁾ report a case in which the blood sugar was 1.01 per cent in the blood and only traces in the urine.

Figure IV shows effect of insulin upon a case of coma and gangrene of the whole of the left ear and side of head with severe cellulitis involving whole side of face and neck. This patient died of infection, the acidosis, if we are to judge from the urine examinations, being under control.

VI. Coma cases. Coma developing in a diabetic in the light of our present knowledge is a therapeutic accident that should be avoided. Prompt action is necessary in the treatment. In the cases that we have seen, we have first taken a blood sugar determination; second, washed the stomach and bowel with a 5 per cent sodium bicarbonate solution, have forced fluids, measuring the intake and output, and fourth have given insulin 30 units at once, buffered by 150

grams of orange juice at once and again in three hours. If a patient cannot swallow, 15 grams of dextrose in a five per cent solu-

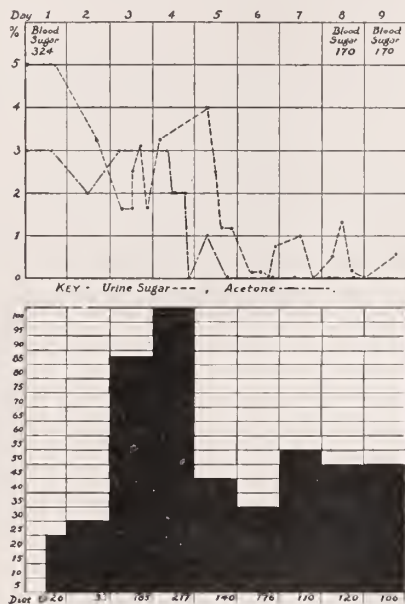


Fig. IV—B. W., Age 57, Height 68 inches, Weight 228 pounds—Showing effect of insulin upon the blood sugar, urinary sugar and acetone, case of diabetic gangrene of left ear with severe infection involving the whole of left side of face and neck.

Patient semi-comatose when first seen. Was apparently recovering from his acidosis but died as a result of the infection which extended into and involved the cerebral sinuses.

tion should be given every three hours by rectum. If this cannot be retained, 25 grams of glucose should be given in freshly distilled water intravenously in 5 to 20 per cent solution.

When the blood sugar determinations are high it may not be necessary to buffer the insulin. Unless accurate determinations are available, however, the safest method is to buffer the insulin by the administration of glucose, for the patient in coma is dying not of hyper-glycemia, but of acidosis and the attempt should be made to first control the acidosis. The clinical symptoms and the urinary findings, acetone and diacetic acid, are the most practical means of judging of acidosis, and, if it is impossible to get sufficient blood sugar determinations, it is safer to allow traces of sugar to come through the kidney rather than take the chance of causing a hypoglycemia. One is treading on dangerous territory in treating a coma case and must take the middle ground for the safety of the patient. He may die on the one hand from acidosis and on the other hand from a hypoglycemia.

The influence of insulin upon two cases of coma, and one case of coma complicated

by infection and gangrene, is shown in the accompanying charts. The danger of hypoglycemia is illustrated by Figure VI, where blood sugar dropped to 56. It promptly rose again with proper treatment and no ill effects were noted.

Seldom will less than 100 units per 24 hours control a severe case of coma. Allen and Sherill⁽¹³⁾ report one case in which 485

INFLUENCE OF INSULIN UPON BLOOD SUGAR
CASE OF DIABETIC COMA.
MRS. L. AGE 22

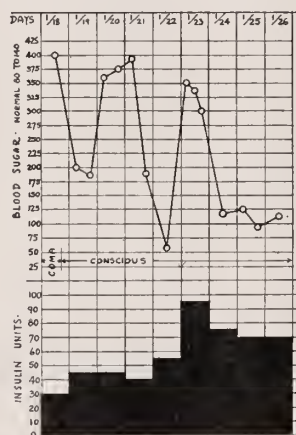


Fig. VI—Showing effect upon blood sugar in a case of diabetic coma—Mrs. L., Age 22, Weight 120 pounds.

This woman had been under the care of a competent physician for diabetes but left his care and attempted to take the short road to recovery via the Abrams route. She ended in coma.

At the present time (February 12th) the urine is normal, blood sugar 135 Mg., P 58 P 150 C 55 total G of 110, with insulin 45 units per 24 hours. She is apparently recovering nicely.

units was passed in the 24 hours. The majority of cases of coma still die because treatment has not been instituted sufficiently early enough and irreversible changes have taken place in the body protoplasm.

With the use of insulin one may cure the coma, but insulin cannot regenerate the cells.

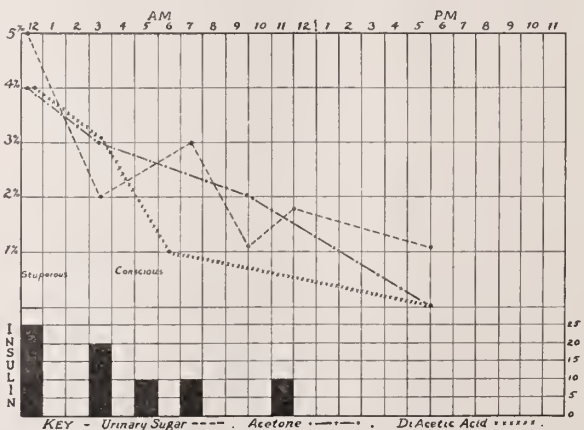


Figure No. VII illustrates this fact. This patient, who had been in a semi-comatose condition for almost six hours, when first seen responded to treatment, became conscious, and the urine cleared. He died a cardiac death 18 hours after first seen.

CONCLUSIONS.

The use of insulin in the treatment of diabetes is one of the notable advances of modern medicine. It improves the life expectancy of the average diabetic and removes the spectre of a coma death that has been constantly haunting them. When one considers the effect on a diabetic child who formerly died in from one to two years, and the marked gain in tolerance shown by some patients while under treatment, the tremendous possibilities become evident. Insulin is not a cure for diabetes, for as Allen says, "It is unreasonable that a pancreatic extract should be able to restore a damaged pancreas. It can, however, relieve the overstrain upon that pancreas." Insulin would be of little value without the knowledge of dietetic principles we have accumulated as the result of work of Allen, Woodyatt, Newburgh, Marsh, Joslin and others, and every patient should be thoroughly taught these principles. He should be instructed how to figure his own G, balance his diet, test his urine and ad-

minister his own insulin if results are to be expected.

"For the wise, who may be rich or poor, young or old, and for the innocent, who can be cared for, insulin is a benefit, but for the ignorant, who likewise may be rich or poor and young or old, it can be dangerous, and a gift of free insulin to such is like casting away pearls." (Joslin).

BIBLIOGRAPHY.

1. Allen Boston Med. & Surg. Journal, Feb. 1915.
2. Magnus Levy, Neber Der Diabetes, in Krieg Deutsch Med Woch., 1919 Vol. 45, 1379.
3. Wilder Brothky, Ruter Journ. Biol. Chem. 1922, L I 311-357.
4. Woodyatt Arch Int. Med. 1921, 28 125-41.
5. Shaffer Journ. Biol. Chem 1921, 49 143-62.
6. Geyelin Journal Met. Research 1923, Vol 2, No. 56 p 188.
7. Newburgh and Marsh Arch. Int. Med 1920, 26 647-62.
8. Newburgh and Marsh Arch. Int. Med. 1921, 27 699-705.
9. Wilder Journ. American Med. Assn., 6-11-22.
10. Campbell, Canadian Med. Journ July, 1923.
11. Journal Metabol. Research Vol 2, M 5-6 P 967.
12. Liefman & Stern Hewlett Path. Physiol. of Int. Disease 290.
13. Allen & Sherill Journ. Met. Research, Vol 2, No. 5-6 p 964.
14. Allen Journal A. M. A. Vol 81, No. 16, 1330 to 1335.

EMPHYEMA COMPLICATING PNEUMONIA*

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When one considers the great number of pneumonias developing from the 1918-1919 pandemic of influenza, the evident virulency of the offending organisms, the usual widespread and massive involvement of the lungs, all resulting in rapid depletion, toxicity, and complications, it is surprising to find that out of 2,577 cases of pneumonia at Camp Travis base hospital, there developed only nineteen cases of empyema, and fourteen cases which might be considered as effusions or abortive empyemas. The striking contrast between the findings in these cases, and those usually met with in the lobar pneumonias make this resume of special interest.

In order that we may better visualize these cases as empyema, let us briefly summarize the courses throughout.

The patients in practically all instances

were healthy robust males with a past history negative, excepting two who claimed pneumonias in 1913 and 1915 respectively. The average age was twenty-three years; they having lived either all or the majority of their lives in the southwestern rural districts, and giving their occupations as "farmers." All had been accepted for military service, and rated as "Class I."

The average time of premonitory influenza symptoms before being received in the influenza camp was one day. The average length of time each patient spent in the "Flu" camp was three days, they being transferred at that time to the base hospital as bronchial pneumonias.

They were in all instances of pure "respiratory type," the resultant symptoms and findings practically making up the clinical picture. In eleven of the cases there is mention of the milder mental derangements with

*Read before Madison County Medical Society, Norfolk, Dec. 11, 1923.

fourteen showing the nephritic involvement, only commensurate evidently with their respiratory pathology and resultant toxicity.

The sites at which pulmonary involvement were first found are as follows:

Right lower.....	11
Left lower.....	2
Bilateral lowers.....	6

From the above mentioned areas there were either a rapid advancement of the original focus or the spotting of new, as usually found in bronchial pneumonia, in some of the cases the coalescence of which gave the physical findings of a lobar (in two instances, massive type) pneumonia.

When admitted to the Base Hospital and up until the time their empyemas were found there was not, apparently, anything striking which would differentiate their courses from any other bronchial pneumonia.

The subjective and objective symptoms, the physical findings, were all in harmony with the many other cases. It is only after delving through the case histories that we become cognizant of the fact that there were differences. That which impresses one most, is that these findings were practically constant. There were, it is true, some cases which did not complicate with empyema, that had some or all of the findings that shall be mentioned, but they were few and far between.

Whereas in a large number of these cases resulting in complete recovery, we find the pulse ranging from 90 to 100, the respirations from 20 to 26, in the cases later complicated by empyema, the pulse throughout has ranged from 100 to 140, the respirations from 26 to 40. Whether this could be attributed to the individuals lowered resistance or the more marked pulmonary involvement from the outset, the more virulent attacking organism, or the strain of organism, either alone or in combination with others not found, is an open question. Pus, if present from the outset, might account for such an increase, but it would be the unusual to find pus in this type of pneumonia much earlier than found, and it is believed that in these cases the pus was found not very long after its advent.

The bacteriological examination revealed that of fifteen early examinations of sputum for predominating organisms, in nine the pneumococcus was found, in four the influenza bacillus, and in one an almost equal com-

bination of both, or 60% showing the pneumococcus to be the organism in predominance. Twelve typings (white rat inoculation) resulted in the return of six type IV, and six unclassified. Blood cultures made on all nineteen patients resulted in two being found positive for pneumococcus, in one of the cases a negative result being obtained after the second culture, and in the other after the third. Seventeen were negative. In eighteen of the cases, having had a leucocyte count on admittance at the base, twelve returned a leucocytosis, three were normal, and three resulted in leucopenias.

The treatment during this stage in all but two cases was of the conservative symptomatic type, the two variances being single intravenous glucose administration, one in each instance just prior to the finding of empyema.

The average number of days elapsing from the onset of the pneumonia to the finding of its complication, empyema, was fifteen,—seven of them being between five and ten, seven between ten and twenty, and five over twenty days.

Of the nineteen cases, twelve were found to be on the right side and seven on the left, all of the cases showing original right side involvement developing right sided empyemas plus one showing original foci bilaterally. The two showing left sided involvement primarily plus five with findings of consolidation, first noted bilaterally, developed left sided empyemas.

At the time when empyema was found to be present there was nothing other than probably slight increase in pulse and respiration rate that would lead one to believe that the patient was developing a complication, and this being more or less common, was given little significance. The temperature was practically unchanged. The patients did not complain of pain, nor was there any marked change in the cough. It was through physical examination that the first danger signal manifested itself. Inspection was negative. Upon palpation, however, a change was found. Tactile fremitus was markedly diminished or lost. When first found it was usually over a very small area, but regardless of the size was practically infallible. It was possible to map out this area in the midst of a consolidation with its resultant increase in fremitus, or in the midst of what seemed normal finding. Percussion was of little value, probably due to

the air laden surrounding lung tissue, or again to the small amount of the fluid. The same was true of auscultation. In fact, upon percussion and auscultation, one could easily be led astray. When the diminished or absent tactile fremitus was found there was an immediate check-up by thoracentesis or x-ray. In only one case was there a difference from those described, that occurring in our one streptococcus hemolyticus pneumonia. In that case there was an increase in fremitus, dullness and tubular breathing. This case proved to be our only check in the mortality column.

The following table will aid in showing the

Original W. B. C.	W. B. C. following Empyema.	Organism eventually recovered in fluid
10,340	25,220	Pneumo.
8,580	20,240	Pneumo.
12,440	22,550	Pneumo.
12,000	22,000	Pneumo.
20,100	31,460	Pneumo. and Infl.
16,550	18,260	Pneumo. and Strep.
12,980	27,060	Pneumo.
10,240	35,200	Pneumo.
12,760	22,000	Pneumo.
4,620	15,400	Influ.
16,550	23,980	Pneumo.
	20,900	Pneumo.
5,500	12,100	Pneumo.
7,260	14,860	Influ.
23,980	18,480	Pneumo.
11,400	18,040	Pneumo.
14,300	9,660	Strep.
7,400	23,100	Pneumo.
4,200	16,840	Influ.

leucocyte changes. Here we find that rather than the usual leukopenia as found in the

early leucopenia resulted in the recovery of the influenza bacillus in the pus taken from the lungs, while one resulted in the finding of the pneumococcus. Two of the three giving normal count disclosed pneumococcus in two and a combination of pneumococcus and influenza bacillus in the other. In only one case where an early leucocytosis was found was the influenza bacillus found in the fluid, and it was in combination with the pneumococcus. In the differential count there was a uniform increase in neutrophilic polymorphonuclears.

In the following table will be found a description of the chest fluid, the results on immediate smear and culture. It will be seen that the majority were found to be pus, those clear straw or sero-sanguinous in color becoming pus in a very short time. The pus was thick, at times hard to withdraw unless the bore of the needle was fairly large. The color varied from yellow to greenish-yellow. Another point of interest here is that upon immediate smear or culture the pneumococcus was found to be the predominating organism, the streptococcus or influenza bacillus, if alone or in combination with the pneumococcus, when found, being soon succeeded by a pure strain of pneumococcae. In only one instance did the fluid differ, and in that the streptococcus hemolyticus was found in pure strain. The fluid in this case developed early, increased in amount rapidly, was not as heavy

Description		Smear		Culture	
1. Pus	2. Pus	1. Pneumo.	2. Pneumo.	1. Pneumo & Infl.	2. Pneumo.
1. Pus		1. Pneumo.		1. Pneumo.	
1. Pus		1. Pneumo.		1. Pneumo.	
1. Sero-sang.	2. Pus	1. Pneumo. & Strep.	2. Pneumo.	1. Pneumo.	2. Pneumo.
Not described.		1. Strep.	2. Pneumo.	1. Strep. & Pneumo.	2. Pneumo.
1. Straw	2. Pus	1. Neg.	2. Pneumo.	1. Neg.	2. Pneumo.
1. Pus		1. Pneumo.		1. Pneumo.	
1. Pus		1. Neg.	2. Pneumo.	1. Pneumo.	2. Pneumo.
1. Straw	2. Pus	1. Neg.	2. Pneumo.	1. Neg.	2. Pneumo.
1. Pus		1. Neg.		1. Pneumo.	
1. Pus		1. Neg.	2. Infl. & Pneumo.	1. Infl.	2. Pneumo.
1. Pus		1. Neg.		1. Pneumo.	
1. Not Described.	2. Pus.	1. Infl.	2. Pneumo.	1. Infl.	2. Pneumo.
1. Pus		1. Pneumo.		1. Pneumo.	
1. Straw	2. Pus 3. Pus	1. Neg 2. Infl. & Pneumo	3. Pneumo	Same as in smear.	
1. Straw	2. Pus	1. Neg.	2. Pneumo.	1. Neg.	2. Pneumo.
1. Straw	2. Sero-sang 3. Pus	1. Neg.	2. Neg. 3. Pneumo.	Same as in smear.	
1. Pus		1. Strep.		1. Strep.	
1. Pus	2. Pus	1. Infl.	2. Pneumo.	1. Infl.	2. Pneumo.

big majority of like pneumonias, we have a leucocytosis from the start, in those cases developing empyema. The increase in total white count is less than usually found in the croupous type of pneumonia complicated by empyema. In addition, the organism recovered from the empyemic fluid is listed, it will be noted that two of those cases showing an

as the other, of brownish tinge, and gave a very disagreeable odor.

The following table gives the results obtained from the blood chemistry, these examinations being made immediately upon the finding of empyema. In the last column the urinary findings are listed.

Sugar	Creatinine	Urea Nitro	Urea	Uric Acid	Chlorides	Urine
.174%	2.85 Mgm	12. Mgm	25.68	2.45 Mgm	.6	Albumen Casts
.11	2.00	9.	19.26	3.95	.55	Negative
.090	1.50	13.50	28.89	1.275	.6	Albumen Casts
.105	1.00	19.	40.60	1.42	.52	Negative
.111	1.85	14.	30.96	1.75	.56	Albumen Casts
.093	1.20	15.3	32.75	1.50	.51	Albumen Casts
.105	.70	11.	23.54	.98	.51	Negative
.132	1.10	21.1	45.15	1.5	.52	Albumen Casts
.12	1.85	13.	27.82	3.25	.68	Negative
.138	1.75	24.75	52.96	1.25	.59	Albumen Casts
.126	1.55	15.25	32.63	1.5	.70	Albumen Casts
.132	1.25	18.50	41.89	1.6	.69	Albumen Casts
.14	2.00	13.50	25.89	1.4	.66	Albumen Casts
.105	1.25	13.75	29.42	1.5	.65	Albumen Casts
.088	1.70	14.	30.16	4.2	.55	Albumen Casts
.14	1.10	14.75	31.56		.64	Negative
.136	1.95	14.25	33.62	1.43	.59	Albumen Casts
.14	1.30	16.75	35.84	1.975	.56	Albumen Casts
.08	2.70	17.25	36.97	4.1	.65	Albumen Casts

It will be seen that an increase in the blood sugar was found in seven of the nineteen cases. In six of these seven there was a corresponding increase in the urea, and urea nitrogen. Only three of the nineteen give an increase in uric acid, these three being normal in practically all other constituents. Eight of the cases show an increase, four showing a decrease, in chlorides, the remainder being normal. The creatinine was constant throughout. In those cases, showing an increase in urea and urea nitrogen, the course was correspondingly aggravated, the most frequently met with symptoms being those of varying degrees of toxicity, characterized chiefly by cyanosis, rapid pulse and respiration, with varying degrees of mental aberration.

In three of the cases there were complications of otitis media, and in one furunculosis. Outside of these and the already present nephritis complicating the pneumonias, there were no other complications.

Two cases in this series were resected immediately after the finding of the pus, and although finally recovering had a stormy convalescence. Sixteen were placed in the "Empyema Ward", and other than symptomatic treatment and aspiration, if necessary on account of too rapid accumulation of pus, were left alone. Surgery was resorted to only after all findings of active pneumonia had subsided. These patients with all their pus, for the most part gained weight, and when operation was decided upon were found to be good surgical risks.

Fourteen other cases might be placed in the category of effusions or abortive empyemas, for either with one or numerous aspirations they all cleared up and were returned to duty from three to five weeks.

The average number of days these patients

spent in the influenza camp were four and one-half, at the end of that time being pronounced bronchial pneumonia, and transferred to the base hospital.

In nine of the cases sputums were examined, and six were found positive for pneumonia, two for influenza bacillae, and one for combination of pneumonia and influenza bacillae. Seven sputums were typed (white rat inoculation), six being unclassified, one a Type IV. The white blood count on all but two resulted in leucopenias, no differential being made. All blood cultures were negative.

The average number of days between the finding of pneumonic processes and the finding of fluid was 16 3/10. It was in these cases especially that the loss of tactile fremitus became a very important point in diagnosis, in six of them being the only point mentioned in arriving at the conclusion that fluid was present. In six others, however, the patients had apparently returned to normal, resolution being practically established, when septic temperature, increase in pulse and respiration, attracted attention. Ten of these cases located their fluid on the right side, three on the left.

The following table will show the original white blood count, that upon finding the complication, and the laboratory reports on the fluid aspirated. Here the great variance in the type of fluids obtained in contrast to those in the true empyema, are apparent. Seven of them are originally described as sero - sanguinous, one described as originally straw color, and the only one showing positive culture (pneumococcae) became sero-sanguinous, the culture becoming negative. In the majority of the cases one aspiration sufficed, and in most cases resulted in obtaining 15 to 30 c. c. of the fluid. In

two cases there were two aspirations, 22 and 14 c. c. respectively, being obtained. In one case three aspirations, and in two cases four aspirations were necessary.

physical finding being diminished or lost tactile fremitus. When found, thoracentesis, or X-ray, or both, should follow.

III. That all cases of empyema here re-

Blood		Bacteriology of Fluid.		
Original W. B. C.	Complication	Description	Smear	Culture
4,520	14,520	Sero-sang. (2)	Neg. (2)	Neg. (2)
4,400	16,060	Straw	Fus cells no Organ	Neg.
5,500	11,000	Sero-sang	Neg.	Neg.
12,320	17,600	Straw	Neg.	Neg.
20,020	29,480	Straw	Neg.	Neg.
5,720	17,820	Sero-sang	Neg.	Neg.
4,840	26,180	1 & 2 Neg 3. Straw 4. Sero-sang.	1 & 2. Neg. 3. Pus-cell. 4. Neg.	1 & 2. Neg. 3. Pneumo. 4. Neg.
4,400	10,640	Sero-sang.	Neg.	Neg.
5,200	14,760	Sero-sang.	Neg.	Neg.
4,620	18,340	Straw (4 times)	Neg. (4 times)	Neg. (4 times)
6,150	18,340	Sero-sang.	Neg.	Neg.
4,520	12,380	Sero-sang. (2)	Neg. (2)	Neg. (2)
9,620	14,920	Sero-sang. (3)	Neg. (3)	Neg. (3)
* 3,820	15,640	Greenish	Neg.	Neg.

* Taken from gangrenous area.

One of these patients had a unilateral otitis media, and nine of them nephritis as complications; otherwise their course was negative.

CONCLUSIONS

I. That empyema complicating pneumonias as found in the epidemic of 1918-19, differs considerably in course, physical findings, and laboratory findings, from the usual textbook pictures of empyemas found in the pneumococcus lobar pneumonias.

II. That daily examination, if possible, will find empyema in this type of case, long before anything clinically shows a change in the patients condition, the most trustworthy

ported gave pulse and respiratory rate increased along with leucocytosis from their reception at base hospitals which differed from the comparatively slow pulse, and low respiratory rate with leucopenia in those cases which did not so complicate. This might find its explanation in type and virulency of organism.

IV. That the pneumococcus, strain unknown, was the organism of predominance in this series.

V. That these cases have a much better chance of recovering if all radical operative procedures are postponed until after active pneumonia has cleared.

SOME SURGICAL DISEASES OF THE RIGHT KIDNEY

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It is not our intention to discuss in detail all of the surgical diseases of the right kidney in this paper. We have purposely limited the subject to the right kidney because of the close proximity of this organ to the various other vital abdominal organs; and, because surgical diseases in the right kidney are too often mistaken for other pathological conditions resulting in an unnecessary operation with no relief of the original symptoms and a dissatisfied patient, all of which reflect, not only on the operator but on the profession as a whole.

Indeed, it is not uncommon in a large clinic to have patients present themselves with the appendix out or some meddlesome operation done on the uterus and right adnexa; when, in fact, the patients were suf-

fering with a duodenal ulcer, gall bladder disease or some surgical condition of the right kidney, etc. This fact has been more or less impressed upon us during the past several years of our surgical experience, but especially during the past few months it has been most profoundly impressed upon us, as we shall try to show you later. Consequently, we feel that a resume of the surgical diseases of the right kidney, from a diagnostic point of view, will be very profitable. However, we do not expect to add anything new, but do hope to go over some of the most outstanding features of the various diseases of this organ for the purpose of sharpening our diagnostic acumen, thereby avoiding serious blunders.

Pyogenic infections of the kidney are com-

mon and in most instances surgical treatment is indicated. If the infection takes the form of a pyelitis or pyelonephritis, both kidneys are sometimes involved and little can be accomplished by surgery. This type of infection oftentimes follows acute tonsillitis, an acute furunculosis or may complicate some infectious disease. The kidney receives the organisms through the blood stream and the involvement usually occurs in the form of a single abscess or more often multiple cortical abscesses. Pyelitis in itself rarely becomes surgical, but is a condition that is sometimes extremely hard to differentiate from an acute appendicitis, and an error in diagnosis might result in the removal of an innocent appendix for an offending pyelitis. In these pyogenic infections, the prodromal symptoms are usually manifested by chills, followed by a rise in temperature, a relatively high leukocyte count and severe pain over the right kidney region which oftentimes radiates to the right lower or the right upper abdomen. Again, the underlying lesion in the kidney may have little or no localizing symptoms while the secondary vesical condition may give rise to all the surgical symptoms. The most outstanding feature of this type of disease is the marked frequency of urination with pus in the urine, and when any doubt exists, we should never fail to procure a good urinary history from the patient in order to exact a good differential diagnosis. The relationship of frequency or, in other words, the vesical symptoms to renal disease is analogous to gastric symptoms in disease of the gall bladder, appendix or duodenum. It is now generally recognized that reflex gastric symptoms may predominate in the clinical picture as the result of disease in the adjacent alimentary tract; consequently, we must likewise regard vesical symptoms as being the warning signal of disease in the urinary tract.

Pyonephrosis is that form of infection in the kidney in which suppuration is combined usually with obstruction to the outflow of the urine. This condition may result from infection associated with hydronephrosis or with stones in the kidney pelvis or renal tissue. Furthermore, it may be encountered in cases of severe cystitis complicated with prostatic enlargement and bladder stone. This type of infection usually presents a symptom complex similar to that of pyelonephritis but usually the patient shows more

evidence of chronic infection over a longer period of time, such as cachexia and wasting, due to the toxemia. If the disease is located in one kidney, the surgical removal of this will usually reward the patient with a definite cure. For the determination of this fact, and, in fact, to make sure of the diagnosis of most cases of pyogenic infection of the right kidney, it becomes necessary to resort to cystoscopy and ureteral catheterization followed, if necessary, by a pyelogram.

Tuberculosis of the kidneys is another disease which is oftentimes overlooked for a long period of time, with disastrous results to the patient. The disease most frequently attacks young individuals between the ages of twenty and thirty-five. The vesical symptoms predominate in this disease and it is not uncommon for a patient to continue as long as ten years, being treated by means of lavage of the bladder and various other internal medication for a so-called cystitis. It will be a conservative attitude to regard all cases of persistent irritability of the bladder with pyuria, particularly, when in the young adult, as due to renal tuberculosis until the contrary is proven. Early recognition of the disease, not alone improves the prognosis but is of equal importance in preventing the unfortunately deep seated infection of the bladder which is so difficult to eradicate. The pain in this type of infection is not as outstanding as the vesical symptoms which cause the patient to arise persistently at night to empty the bladder. All of these cases of persistent cystitis should be subjected to a cystoscopic examination and if tuberculosis is present, we usually find a marked ulceration in the bladder which will lend evidence very materially in clearing up the diagnosis. This should be followed by ureteral catheterization and a specimen obtained for a guinea pig inoculation and microscopic study. The urine should be repeatedly stained for tubercle bacilli in all suspected cases. This is too often neglected when considering tuberculosis of the kidney. I am sure every one of us would have no hesitancy in staining the sputum at frequent intervals for tubercle bacilli, if we suspected tuberculosis of the lungs—then, why not do likewise when in doubt as to whether or not the individual has tuberculosis of the kidneys? Braash makes the statement that he has been able to demonstrate tubercle bacilli in the urine of at least eighty per cent of all his

renal tubercular cases. This, indeed, is very encouraging and demonstrates what can be accomplished from a diagnostic point of view by persistent laboratory effort.

Renal and ureteral calculi cause a great variety of pain, the differentiation of which sometimes tests our diagnostic ability to the utmost. Stone in the kidney per se oftentimes lies dormant without causing any symptomatology whatever. At other times it causes vague abdominal symptoms which are not at all characteristic. If infection is superimposed on the stone, then, we are more likely to get definite symptoms referable to the kidney. The pain in ureteral calculi usually occurs from two conditions; first, because of intra-renal tension as the result of urinary obstruction, and, secondly, because of localizing infectious changes. The pain in most of these cases usually appears in the following locations named in the order of their frequency: First, over the renal area; second, in the upper abdominal quadrant; third, the lower ureteral area or lower abdominal quadrant; and fourth, the suprapubic region. And in a certain few cases, there is no radiation of the pain along the tract of the ureter while in others there is no pain whatever. It is probably true that renal colic, as a result of lithiasis, is caused more frequently by a stone lodged in the ureter than in the kidney. In a large number of cases in which the pain is referred to the upper abdominal quadrant, it is easy to see how confusion with lesions in the upper abdomen might follow. As a matter of fact, in certain cases, the radiation of pain is so typical of disease in the gall bladder that in the absence of urinary findings, surgical exploration of the gall bladder would be justifiable without a preliminary roentgenographic examination. Of particular interest is the localization of pain referred to the area of the lower ureter. This group of cases is most frequently confused with appendicitis, particularly when the pain is on the right side. The localization of pain to the region of the lower abdominal quadrant occurs usually as a result of ulcerative changes in the ureteral wall and subsequent periureteritis. A history, therefore, of previous colic referred to the renal area with subsequent pain localized to the lower ureteral quadrant would be suggestive of an impacted ureteral stone with periureteritis. This would be particularly true, if the pain previously periodical, became continuous over a

period of a week or more. Individuals having a calculus present who do not complain of any attacks of severe pain or do not have a definite radiation, oftentimes seek relief later for a renal infection which will lead one to investigate the urinary tract and probably uncover the stone. We also know that a stone may lie in the ureter for months without causing any pain. And again at times the pain may be a general abdominal pain due to ureteral calculi without localization and accompanied with the symptoms of vomiting and intestinal spasm suggestive of intestinal obstruction, which to my knowledge has led to operation for intestinal obstruction. However, if we keep in mind renal lithiasis in all cases of right abdominal pain, bearing in mind the character of the pain, its various locations, and the vesical irritability which accompanies most of these attacks, follow this by a careful study of the urine, and when in doubt, a radiogram of the kidney, ureter, bladder region, we feel the diagnostic error will be minimized and will result in fewer unsatisfactory operations.

Tumor of the right kidney should always be differentiated from hydrops of the gall bladder, tumor of the liver, pancreatic cysts, ovarian cysts, mesenteric cysts and tumor of the colon. This, in fact, will not be so hard when one keeps in mind the cardinal symptoms of tumor of the kidney which are: First—pain generally localized over the kidney area; second—tumor which usually has a through and through feel; and third—hematuria. The hematuria usually appears in large quantities over short intervals followed by a period of freedom for weeks or months. Bearing the cardinal symptoms in mind, then one should resort to a cystoscopic and pyelographic examination to definitely diagnose the mass.

Hydronephrosis, particularly of the right kidney, is the one surgical disease which has lead us to give this resume. Patients oftentimes appear complaining of intermittent attacks of pain in the upper right abdomen. The condition has been regarded as a disease of the appendix, gall bladder, pelvic organs or as a renal or ureteral lithiasis too often. With these various diagnoses, surgeons have repeatedly opened the abdomen, only to find a hydronephritic kidney or to overlook the underlying condition entirely, with no cessation of the symptoms in question. The disease usually begins in the young adult and mani-

feats itself by acute attacks of abdominal pain. The frequency of the attacks is variable, appearing at intervals of a week to years, although the usual interval is a month or two. At times, patients with long standing trouble complain of a steady ache continuing between the acute attacks. The onset is usually sudden and some unusual exercise may precipitate the attack. The pain is most commonly referred to the upper abdominal quadrant and to the back near the costovertebral angle. In some of the cases, the pain is referred to the lower quadrant, as well as the upper, and a certain few to the lower quadrant alone. As a rule, the pain is not referred along the course of the ureter as distinctly as it is in kidney or ureteral stone but remains localized. It is generally acute for hours and a soreness in the affected side may continue during a day or two following the attack. The pain is not, as a rule as acute as in that attending gall stone and kidney stone colic. Again, the pain may be absent in the affected side, the condition remaining latent until the obstruction becomes so great that the patient notices a tumor in the abdomen. The normal side may also be the seat of some pain which is usually due to the engorgement of the kidney as the result of a compensatory hypertrophy, although the possibility of a bilateral hydronephrosis is always to be considered. In women, as a rule, the attacks appear independently of menstruation. Gastric disturbances such as nausea and vomiting are quite prominent. The differential diagnosis of this condition from appendicitis is:

- 1—Location of pain which is higher up and is referred usually to the costovertebral angle.
- 2—Intermittence of attacks.
- 3—Absence of temperature and prolonged prostration.
- 4—Absence of marked tenderness over the appendix.
- 5—Presence of pus in the urine.
- 6—Cystoscopic findings.

Gall stones may usually be differentiated by:

- 1—The fact that pain is referred more to the pit of the stomach, radiating thence to the back.
- 2—The more irregular periodicity of attack.
- 3—The fact that this is more pronounced with constant nausea and vomiting.

4—The attack as a rule is more acute.

5—The more rapid onset and early disappearance of pain.

6—Icterus.

7—A negative urine.

Nephrolithiasis frequently manifests symptoms similar to hydronephrosis and is sometimes very hard to differentiate. In lithiasis, the symptoms are more severe and there is a history of blood in the urine. The microscopic examination of the urine practically always reveals a few blood cells. In fact, the radiogram, when checked by the ureteral catheter is the most infallible way to make the differentiation between these two conditions. Pancreatic and ovarian cysts may at times have to be differentiated but the cystoscope and pyelogram will suffice for this.

The two following case histories are indeed very enlightening on hydronephrosis:

Mrs. S., aged 36, who presented herself at the clinic one year ago last April, came complaining of a pain in the right abdomen just above the anterior superior spine. She stated that sixteen years ago she had her appendix removed and dated the onset of her present trouble from this time. Following the removal of her appendix, she did not have pain of any consequence for about eight years; then she was suddenly seized with a rather severe pain in the right upper abdomen and noticed a swelling at the right costal margin. She immediately got aboard a train and consulted a good surgeon in Omaha. By the time she arrived there, the swelling that she described had disappeared followed by the output of a large quantity of urine. The surgeon made a diagnosis of gall bladder disease and advised an immediate operation, to which the patient did not submit, but returned home and since that time she has had frequent spells of chills, fever and pain in the right upper abdomen and has noticed the formation of a tumor which would disappear, after passing a large quantity of urine, with an ultimate subsidence of pain. The pain would last as long as one to three days at a time and was always followed by considerable residual soreness. Of late the pain has been almost constant with acute exacerbations every three to four weeks. There has been frequency at times, also nausea and vomiting. Examination revealed tenderness about midway between the right costal margin and anterior superior spine. We could also make out a mass in this region which we took to be the right kidney. Aside from this, there was nothing of importance in the physical examination. Examination of the urine showed pus 2 on a scale of 4 after taking the catheterized specimen. With this history and the urine report, we did a cystoscopic examination and found a very mild degree of cystitis. Number 5 catheters were passed up both sides without meeting any obstruction. The Indigo Carmine test showed a seven minute return on the right and a four minute return on the left. Ureteral specimens showed pus 2 on the right and an occasional pus cell on the left. The pyelo-

gram, Figure 1, shows a moderately dilated pelvis with clubbing of the upper calyx.

Last Monday morning, we resected this kidney, using paravertebral anaesthesia. We found a soft flabby kidney slightly larger than normal lying freely movable in the right abdomen in about the region where she formerly had pain. The kidney was delivered and on inspection, we found an anomalous vessel running into the lower pole of the kidney and crossing in front of the ureter just below its junction with the pelvis of the kidney. The pedicle along with this anomalous vessel was ligated



Fig. I

and the kidney removed. The capsule of the organ was very adherent throughout and on longitudinal section we found the pelvis dilated and containing a considerable amount of fatty tissue. The parenchyma grossly showed a moderate degree of inflammatory trouble. In this particular instance, we feel the anomalous vessel was responsible for the moderate right hydronephrosis.

The second case is that of a lady 45 years of age, who went to a surgeon in a nearby town six years ago, complaining of pain in the right loin and the right abdomen. The doctor diagnosed some pelvic trouble and advised an operation. However, it might be added that as far as we were able to determine, her menstrual history prior to the operation was perfectly normal. The patient submitted to the doctor's diagnosis and a complete hysterectomy and appendectomy were done. For some reason, a drain was placed in the incision. Following this, the patient made a fair convalescence with the exception of the discharge of pus for several weeks, but in the seventh week, she was seized with severe chills, fever, nausea and vomiting. Soon after the onset of these symptoms, the surgeon advised another operation, making a right rectus incision, and what was done, we are unable to definitely determine. The patient states that all the information she was able to get was that he "prepared an ulcer of the stomach." Her convalescence from this time on was

rather stormy. In all, she was in the hospital seventeen weeks and was an invalid for the next four years at her home. Soon after this, she gained enough strength to be up and around, and went to the same city and fell into the hands of another man who accepted the former surgeon's diagnosis of an ulcer of the stomach. He placed her on an ulcer diet but the patient continued to have her frequent spells of chills, nausea, vomiting and fever accompanied by pain in the right abdomen. The doctor continued to keep her on an ulcer diet, helping to reduce her weight rapidly with the infection she was carrying. The patient soon became practically bedridden again and after two years of this treatment and the expenditure of approximately \$4,000.00, the husband, an intelligent farmer, became very disgusted with the medical profession at large. He came to the clinic, and, assuming a very defiant attitude, asked us plainly if we thought we were able to do anything for his wife. If not, he wanted us to say so immediately.

After talking with him at length, he decided to bring his wife in for a diagnosis. We found a weak anaemic woman who was scarcely able to walk—in fact, she had to be assisted into the office. The history was that of having spells of chills, fever, nau-



Fig. II

sea and vomiting, accompanied by pain in the right upper abdomen with some frequency at times. The physical examination revealed a fullness and tenderness over the right kidney area with a small post-operative hernia in the lower angle of the right rectus incision. Her pulse at this time was 98, temperature 99.6. Aside from this, there was nothing of further importance. The urine showed 2 for pus and a moderate amount of albumin. A catheterized

specimen showed the same. Hemoglobin 70 per cent and the white count 10,950. After preparing the patient, a kidney ureter bladder roentgenogram was taken, which showed phleboliths on both sides with an exostosis in the right pelvis. A cystoscopic examination revealed a very mild cystitis. Both ureteral openings were plainly seen. The urine from the right side was slightly turbid, but none came down from the left side after twenty minutes of observation. A number 5 catheter was passed up the right side without meeting any obstruction. The same size was tried on the left but met with obstruction about 30 cm. from the end of the cystoscope. We next tried the smallest size catheter and after considerable patience were unable to pass the obstruction. We then replaced a number 5 x-ray catheter up the left side and proceeded to collect a specimen for microscopic study. No urine came down from the left side. The ureteral specimen from the right showed 2 for pus. We got a four minute return on the right with the Indigo Carmine functional test, but were unable to collect any urine whatever from the left side. We then tried to make a ureterogram on the left side but were unable to do so on account of the rapid return of the solution. A pyelogram on the right—Figure 2—shows a markedly dilated pelvis and calices, with a large dilatation of the ureter. The x-ray catheter can be seen on the left showing the point of obstruction near the pelvic brim.

With the symptomatology as we have described and the findings we were able to obtain, the conclusions that we reached were as follows: The patient complained of a right kidney pain, but un-

fortunately, had her uterus and appendix removed and during the operation, the surgeon accidentally tied off the left ureter, causing a complete atrophy of the left kidney, and left the original pathology—a right infected hydronephrosis. After a careful explanation, we succeeded in convincing the husband that our diagnosis was correct. Consequently, he allowed us to institute treatment. We immediately stopped the ulcer regime and placed her on a good, substantial diet, lavaging the pelvis of the kidney once a week with silver nitrate. After three weeks of this line of treatment, the patient gained seven pounds in weight and was able to carry on light household duties.

Mistaken diagnosis such as the ones described are indeed very unfortunate. However, if we bear in mind the following outstanding features: One—the urinary history, constantly remembering at all times the protean character of pain due to the right kidney and ureter; two—a careful microscopic examination of the urine; three—a cystoscopic combined with a reontgenologic and pyelographic study, if the history and urinary findings warrant it, we feel the error in diagnosis will be materially minimized, thereby reducing the morbidity and above all submitting the patient to the one proper operation, if need be for relief, instead of a series of operations and, paramount, a dissatisfied patient.

OSTEOMYELITIS OF THE ILIUM*

Frederick G. Kolouch, M. D., Schuyler, Nebr.

The literature with regard to osteomyelitis of the ilium is rather meagre. The condition, while unusual, is not so rare that one should be surprised at seeing a case. When it occurs it is a serious condition, because diagnosis at first may be difficult, and it is more of a surgical emergency than the average intra-abdominal infection.

The disease has been looked on as infrequent, from such published reports as that of Monsaingeon, ⁽¹⁾ who, in his theses published in 1911, was able to compile eleven cases during a period of thirteen years in the Infantile Surgical Clinic of the Faculty of Paris. In the German Surgical Congress ⁽²⁾ of 1894, there was reported by Lucke, in twenty-four cases of osteomyelitis, one of the ilium, Volkman, in twenty-nine cases, none; Schede found two in twenty-four cases; Kocher in thirty cases reported one of the ilium; Heidenhaim in forty-six cases found one of the ilium. Haaga in the clinic

of Von Bruns in four hundred and fourteen cases found only four of osteomyelitis of the ilium. Milchner reports that in five years in the Clinic at Fribourg, there were fifty-five cases, among which were five of the ilium. Bergman ⁽³⁾ reported one case in which a radical operation was performed with good results. Simmons ⁽⁴⁾ reported two in 1915. Vaughn ⁽⁵⁾ mentioned two cases in 1917. Speese ⁽⁶⁾ and Skillern Jr. report one with date of Sept. 2, 1917. In 1921 Geist ⁽⁷⁾ reported three cases, and 1923 Bearse ⁽⁶⁾ added two more.

It may happen at any age, but the ilium is most subject to acute infections during the ossification of the bone, that is up to twenty-five years.

Trauma is a distinct factor in the disease, but it is practically always a blood borne infection from a primary focus situated elsewhere in the body, such as a tonsillitis, furuncle, cellulitis, etc. The common type of organism is staphylococcus aureus and some strains streptococci.

*The author purposely omitted the study of the cases which remain fixed in the acetabulum.

The infection involves all parts of the bone, very often the periosteum is the only part affected, this happens more often in osteomyelitis of the flat bones than in the long bones, the construction of the bone gives the reason, formed of two flat sheets of compact tissue, it has very little spongy tissue, except in the thicker parts. There is cell proliferation of the spongy mass, the chemical composition of the tissue changing at the same time, the fat diminishes, the marrow becomes hyperemic the bone softened. Then suppuration appears with abscess formation. These abscesses may lift the periosteum on the exterior or the interior of the pelvis or both sides at the same time. The pus may burrow among the muscles and fascia of the parts in any direction, the inguinal and the iliac glands are frequently enlarged. In a large proportion of cases the sacroiliac and the hip joints are involved. The lesion begins most often in one of the iliac fossae. In the external fossa it usually makes the start above and behind the acetabulum, which menaces the hip joint. There are two sites of predilection in the internal iliac fossa, one in front of the articular facet of the sacrum and one behind the anterior superior spine, the pus lifts the iliac muscle and is carried to the inguinal region or will flow into the pelvis and may escape by the great sciatic notch. When the crest is affected the collection of pus may escape backwards into the lumbo-sacral region, the triangle of Petit, or into one or the other of the iliac fossae.

Symptoms vary according to character and severity of the infection, the systemic symptoms are the same as in osteomyelitis of other bones. The picture is often one of an intense and rapidly fatal sepsis, in the face of which surgery finds itself quite helpless. The local symptoms are usually referred to the hip joint, that is pain and spasm in the hip upon attempted motion, but with gentleness and care the joint can be slowly manipulated. In some cases there is pain and swelling in the sacroiliac joint, or collateral edema over the joint. There is more or less pain in the bone, which upon deep pressure becomes acute, violent and characteristic, the location of the pain varies with the site of infection.

Diagnosis is made on signs present. When a patient presents a high temperature with a serious systemic condition, and no visible

cause, an examination of all the bones of the body should be made so that osteomyelitis will not be overlooked. The history is very important, especially pertaining to an antecedent acute focal infection such as coryza, bronchitis, furuncle, etc. The onset is usually fairly typical, but the preliminary chill is often absent in osteomyelitis of the ilium, because the marrow of the flat bones is less vascular than that of the long bones, and consequently there is less septic absorption, but pain, gradually growing in severity, dull and throbbing in character, high fever, high leucocyte count, pain and spasm in the hip and eliciting acute, violent pain on deep pressure, present a picture which scarcely can be confused with any other acute lesion in the region. On the other hand the diagnosis may be difficult when the local signs are absent or when the deeper parts are involved. The more violent the general symptoms, the greater amount of local pain, the more probable the diagnosis of osteomyelitis. If the patient survives a week or two, the signs and symptoms of deep seated suppuration will become evident. In the mild cases the condition may remain obscure for a considerable period, as when a focus is limited to a portion of the bone not readily accessible to palpation, for example the internal iliac fossa. Roentgen-ray findings are always negative in the early stages. It is not until gross destruction of cancellous bone has taken place, or until new bone begins to form as an involucrum that the x-ray reveals any definite picture. Conditions which might be confused with the diagnosis are rheumatism, typhoid fever, acute coxitis, acute appendicitis, and acute iliopsoasitis, a rare but very serious complication of acute appendicitis.

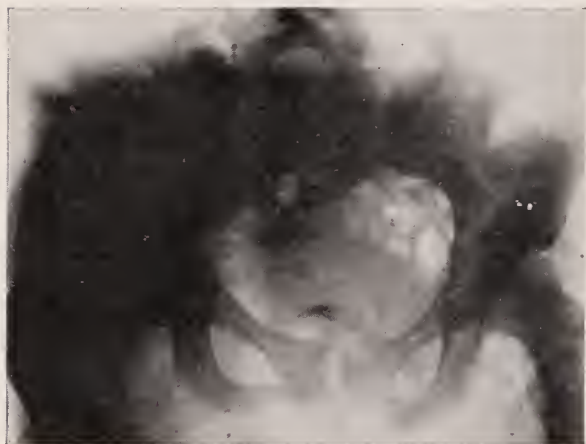
TREATMENT.

Early operation with adequate drainage, counter drainage and removal of dead bone. The principles of drainage in these cases do not differ in essentials from the general principles applying to the drainage of acute purulent collections elsewhere. Drainage should be secured as soon as the diagnosis is made, and oftentimes this is too late, due to the failure of a timely diagnosis. Trepanation must be done in several places until pus is found. Then Carrel Dakin sterilization will complete the treatment providing no more sequestration takes place.

A brief synopsis of the case forming the basis of this paper is here appended.

On Nov. 25, 1921, Dr. W. J. Kavan of Clarkson, Nebr., asked me to see a young lady V. K. age 16, suffering with acute pain in the right inguinal region, which was referred to the right sacroiliac region. She was nauseated but had not vomited. At the time of our visit the pain which had always been confined to the right side, was not marked, but the night before had been severe. The present attack came on a few days before, while attending school.

Family history revealed nothing of importance. Outside of a mild chlorosis, always had been well. About a week ago had a mild attack of tonsillitis, which was afebrile and subsided in a few days. About three days before our visit, she felt a severe pain in the right inguinal region while sitting in school. She went home was put to bed, and develop-



ed a high fever. She had no chill, her pain was continual, although at times it was more severe, and it was bad enough to make her cry part of the time. At times she complained of pain in the hip and sacroiliac joint.

Examination of the patient showed nothing abnormal except the febrile condition, there was full range of motion in both hips, but on palpation the sacrum and the sacroiliac joint were sensitive. There was a slight swelling over the right sacroiliac joint. Her temperature was 103, pulse 128.

As the patient was in the country we advised her to be removed to the hospital for laboratory examination. Not being able to elicit any definite point of tenderness we deferred the diagnosis, although osteomyelitis was seriously considered.

I did not see the patient for about ten days, and when they brought her in she had the unmistakable signs of a deep seated abscess in the right iliac fossa. There was tenderness and rigidity immediately to the inner side of the anterior superior iliac spine, the thigh was flexed, and any movements of the thigh involving tension on the psoas muscle gave severe pain and produced lordosis. White cell count was 22000. Temp. 102, Pulse 132.

Under ether anaesthesia a four inch incision was made internal to the anterior superior spine, with blunt dissection I reached the visceral side of the ilium and there liberated a large quantity of pus. There was considerable roughened bone, several fistulae but no sequestra. A drainage tube was in-

serted and the patient made a rapid recovery. The operative wound contracted down to a small sinus which continually discharged considerable pus. Culture of the pus proved to be staphylococcus aureus. Later a roentgenogram was taken which showed quite extensive sequestration and multiple fistulae. The patient was advised to undergo a sequestrectomy, to which she submitted on May 22, 1923. We used the Sprengel-Smith-Peterson means of approach, as the ilium is particularly accessible by that method, removing the periosteum with the muscles from both surfaces of the ilium and in that way we found one sequestrum just posterior to the anterior superior spine and one in front of the sacroiliac joint on the inner surface, and on the outer surface there was a sequestrum behind the acetabulum. There were several fistulas through the bone. After removing sequestra, with chisel and rongeur I removed all the diseased bone. At first resection was considered, but the extent of involvement did not warrant so radical a procedure. The periosteum was then sutured together over the crest of the ilium and the wound was permitted to heal by the aseptic blood clot method.

Outside of a spicule of bone which came through the incision, the patient made a rapid recovery, and the last time seen she was in excellent health and incision had healed nicely.

BIBLIOGRAPHY.

1. Monsaingeon, Marrice: L Osteomyelite Aigue de l'os iliaque. These pour le Doctarat en Medicine, 1911.
2. Quoted by Monsaingeon.
3. Bergman: Resection of Ilium for Acute Osteomyelitis, Arch f. Klin. Chir. 504.
4. Simmons C. C.. The Treatment of Osteomyelitis. S. G. & O. 20, 129.
5. Vaughn, Roger T. Surg. Clin. of Chicago. Vol. 2. No. 2.
6. Speese & Skillern Jr.: Osteomyelitis of Ilium, Int. Clin. Vol. 4.
7. Geist, Emil: Osteomyelitis of Pelvic Bones. J. A. M. A. 77. 25.
8. Bearse, Carl: Osteomyelitis of the Ilium in Children. J. A. M. A. 80. 14.

A SIMPLE METHOD OF FIXING THE SELF-RETAINING CATHETER

H. Heuss (Klinik Unger, Berlin) communicates the following method: A rubber-drain, finger-thick, 15 to 20 cm. in length, is longitudinally cut through on both sides. On one side quite to the end, on the other to within 2 or 3 cm. of the end, thus leaving a bridge connecting the two halves of the drain. These are applied on either side of the penis and fastened by a circular bandage. The projecting end of the catheter is placed in the bridge, and the gutter-like front part of the drain is firmly tied round the catheter without compressing its lumen. (M. m. W. No. 17, 1923.)

THE MELTING POT*

Arthur Sweeney, M. D., St. Paul, Minn.

In forming our estimate of people we measure them objectively as to height, weight and appearance, and mentally by their success or failure in their occupations. If one succeeds in life he is normal and if he fails he is sub-normal. This estimate of human beings is necessarily superficial and erroneous. The great experiment performed by the Psychological Department of the Army, during the late war, has established a new and more accurate standard by which we can measure men and their mentality. The task of preparing a large army for efficient work during the late war demanded some quick method of sorting the heterogeneous mass of men into engineers, artillery men, machine gun battalions, service of supply, signal corps, sanitary train, infantry men and pioneer battalions, each demanding different mental and physical qualifications. By the preliminary work of the Committee of the American Psychological Association certain tests were devised, based upon the work of Binet, which more or less accurately determined the mental age of the recruits, and, therefore, their adaptability to the various arms of service. It furnished a yard stick by which we might measure the mental capacity of the recruits with as much accuracy as we could determine their physical qualities. Without this method we never would have been able to present at Chateau Thierry, St. Mihiel and the Argonne the thoroughly trained and valorous Army which overcame the German power.

Under the psychological test men were rated according to their mental age and it was found that seven per cent were in the feeble-minded class with a mental age of seven to nine years; fifteen per cent were in the inferior or moron class with a mental age of nine to eleven years; twenty per cent were in the low average class with a mental age of eleven to thirteen years; twenty-five per cent were in the average class with a mental age of thirteen to fourteen and one-half years, and eighteen per cent were in the high average class with a mental age of fourteen and one-half to sixteen years; ten per cent were in the superior class with a mental age of sixteen to eighteen years, and five per cent were in the very superior class, with a

mental age over eighteen years. The educational and industrial possibilities of these classes were restricted according to their mental age. The imbecile class could not go to school, the moron class could reach the second grade, but were incapable of sustained work and were below the grade of common labor. The low average class could get to the fifth grade in school and could do common labor. The average class could get through the grades, but could not enter high-school and constituted the bulk of the skilled labor of the country. The high average class could finish high-school and assumed such occupations as bookkeepers, stenographers, salesmen and other occupations requiring a high level of intelligence. The superior class could get through college and represented in industry, the very successful business and professional men; while the very superior class were leaders in all industries and occupations with intelligence that had no limit, except in their ambition and application. The two lower classes called the D and D minus classes were of little use in the army, as, indeed, they are of small use in civil life. They understood orders poorly and could work only under direct supervision. They are necessarily illiterate and could not get in touch with their environment.

The above record is that of the average white draft. Low as the average appears, it does not compare with the ratings of those born in foreign countries, 360,000 of whom were submitted to the psychological test. The percentage of those in the D and D minus classes was 45.8 per cent. The percentage of very superior men was negligible. The most significant fact developed in the examination of foreigners was the large percentage of undesirable people coming from Eastern and Southern Europe, as contrasted with the small percentage of undesirables coming from the Nordic lands of Northern and Western Europe. The percentage of undesirables from Poland was 69.9 per cent; from Italy 63 per cent; from Russia 60 per cent; from Greece 43 per cent; from Turkey 41 per cent. These figures of low intelligence can best startlingly contrasted with the ratings of immigrants from Germany, Scotland, Denmark, Holland and England, from which countries the average of undesirables was only nine per cent.

*Talk given before the Omaha Surgical Club.

When a surgeon wishes to transfuse blood into an anemic subject he does not pick a way-farer from the street and without examination inject his vitiated blood into the veins of the patient, but he is careful to make examination to determine the type of blood which is best adaptable to transfusion. He selects with care the blood which he is to mix with that of the patient's. With the body politic the case is different. Regardless of the character of blood and without examination to determine the quality, we have mixed with the pure blood of the American race the deteriorated elements of degenerate civilization of Eastern and Southern Europe. For ten years prior to 1914 over a million unscrutinized aliens were admitted to this country to mix their decadent stock with that of the Nordic element which founded this country and established the high principles and ideals of democracy, of which it is our pride to boast. At the present time there are thirteen million seven hundred and twelve thousand foreign born people in this country, and if we apply to them the ratings as to intelligence found by the army psychological tests, two million of them would be in the feeble-minded class and four million in the inferior or moron class. In other words, there are six million who are below the mental age of eleven years. We who boast that this country is the refuge for the oppressed of other nations, cannot view with complacency the mixture of this amount of degenerate blood with that of the body politic. These people are constitutionally inferior, having limited educational and industrial possibilities, illiterate and accustomed to conditions of life variant from ours, can never understand the ideals and principles upon which this government is conducted, and can never become citizens in a true sense of the word.

The great danger to which this condition points is mongrelizing of our American stock. Athens had 94,000 free-men and 600,000 slaves from their conquests of the East. Interbreeding of free-men and slaves caused such degeneration of racial stock that its glory has departed and the Grecian blood has disappeared. Degeneration of Roman civilization finds its source in the mongrelizing of its blood by captives of its victorious armies. All history teems with instances in which the strong primitive races have become weakened by their success and by inter-marriage with inferior races.

The problem most imminent in this country is the preservation of the Nordic elements of our stock and the exclusion of the vitiated blood of Eastern Europe, tainted as it has been through centuries, by repeated invasions of Mongols and Tartars from Asia. The immigration bill, now introduced in Congress, requires not only limitation in the number of immigrants, but also competent physical and mental examination on the other side of the water, with a view to the exclusion of all those whose intellectual level is so low that they can never become citizens of this country in the true sense of the word. The danger is imminent, the remedy is at hand, and it is hoped that Congress will have wisdom enough to recognize the one and apply the other.

—821 Lowry Bldg.

AS OTHERS SEE US.

It is extremely difficult for members of the medical profession to understand the attitude of the lay mind in relation to the art and science with which we are most concerned. While there is presented to the physician in bold relief an almost innumerable array of facts, a constantly increasing mass of incontrovertible evidence which goes to show how well founded and scientifically fortified, from the standpoint of achievement alone, modern medical practice it, it is most difficult for us to realize why the general public fails to a large degree in accepting our point of view.

The question arises—has not the medical profession individually and collectively failed to present the facts to the laity in assimilable form? To take the position that the lay public has not accepted the facts, as they actually are, because of lack of education or intelligence, is a mistake. Such well known authors as Upton Sinclair, Bernard Shaw and more recently John D. Barry, have, it would seem, ample opportunity of ascertaining the facts and yet Sinclair falls an easy prey to the wiles of one of the most colossal fakers known today. Bernard Shaw, likewise, while using terms of the most select English upbraids vivisection with a myriad of arguments, which to the trained physician are recognized as absurd and ludicrous.

More recently in the public press under the caption "Doctors and the Public," Mr. John D. Barry subjects us to a somewhat critical review. The well known conservatism

of this writer and the facility with which he takes the reader into his confidence and attempts to disarm him by the subtle expedient of damning us with faint praise; the opportunity afforded such a writer to present his views, which he does in an exceedingly palatable form; the entire absence of any chance for those possessing the facts to dispute or correct his misconceptions and fallacious deductions—all serve to throw light upon the topic under discussion.

The last annual convention of the American Medical Association held in San Francisco seems to be the stimulus which brought from the facile pen of Mr. Barry some expressions regarding the medical profession which are apropos of the subject, "Doctors and the Public." He first compliments the newspapers (and this most justly) for the manner in which they handled the news of the convention. In considering the activities of the various sections, this writer's grasp upon the concept of our scientific assembly, its hopes and ideals, the benefits to the public which inevitably result from the interchange of ideas and the relating of experience which take place in these assemblages, his appreciation of the effect of years of labor, industry and concentration in the field of practice and research made in the interest of the public is summed up in no uncertain terms when he states that "there was much talk but nothing done." To those of us who know what the widespread dissemination of knowledge through the medical profession means to the public the viewpoint of this writer will be difficult to understand.

Again the efforts of the medical profession to safeguard the interests of the public by more specifically defining the activities of the Red Cross (which by the way he seems to forget is a child of our own creation) are interpreted by him to mean that we fear the Red Cross as a business competitor. This writer's prediction that surgery will in the future become unnecessary by the influence of the mind upon the ductless glands express a hope with which all physicians will concur. Fortunately Mr. Barry momentarily drops the veil and makes one question his neutrality while offering the experience of an English speaker who was heckled by some medical students when delivering a tirade against vivisection in this country, a circumstance which he considers

characteristic of the medical profession and an evidence of its intolerance.

The criticism by this writer and others as well as that of the general public is not without its bright side and his advice to us to seek assiduously the public confidence may well be listened to with the utmost respect. He calls attention to the fact that most great organizations employ publicity counsel and that this is essential to success. May not this point be worthy of serious consideration by the medical profession? Is it not time that we as a profession take the public into our confidence by the means that have been found most successful by other organizations and in doing so bring to our own ranks any credit we may deserve with benefits to the public which will many times multiply our own?

President Wilbur, of the American Medical Association, has recently stated his belief that the proper application of the knowledge possessed by the medical profession today would undoubtedly increase the average span of life at least ten years. Is not the method suggested by Mr. Barry the advisable one to pursue?

—R. E. F., in *Minnesota Medicine*.

THE PATIENT'S MIND.

William House, Portland, Ore. (*Journal A. M. A.* July 21, 1923), summarizes his paper as follows: The sick body is always accompanied by a sick mind. Many sick persons have no organic disorder, but suffer from the effects of suggestion either from within or from without. If suggestion produces disease, it can also cure disease. Recovery of both mind and body is retarded by fear, worry and misinterpretation of symptoms, and is hastened by their removal. Much of the success of the cultists is due to their ability to inspire hope. All that they do can be better done by trained physicians. There is nothing mysterious in scientific psychotherapy. Every physician consciously or unconsciously uses it in his practice. It consists in finding out what is going on in the patient's mind and relieving it by rational explanation and encouragement based on accurate diagnosis. Psychotherapy should supplement and not displace other recognized forms of treatment. Scientific minds will respond to scientific methods, but child minds can be reached only by methods suited to their limitations.

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*Annual Meeting, Omaha
May 13, 14, 15*

CALL FOR PAPERS

The call for papers to be read before The State Meeting at Omaha May 13, 14, 15, 1924, will close April 1, 1924. This is necessary to give the committee time to finish the Programme. Consequently those of you who wish to read papers at this meeting will please send in name and title at once.

READ THIS

Do you want Nebraska to have three delegates in The House of Delegates of The American Association? We can do this if each member will pay his dues at once. Our membership, when paid in full, is not enough more than the required number necessary to entitle us to three delegates to give us any margin. We need every member. Our report must be at the office of The American Medical Association a few days before April 1, 1924, at the latest. Therefore, those of you who have not paid your dues please send \$5.00 plus your local society dues to your secretary at once. We need every member. Do not delay.

MEDICAL SOCIETY POLITICS.

The greatest professional honor possible to a physician within this state is to be elevated by his fellows to the presidency of the Nebraska State Medical Association. It is but natural, therefore, that many should be willing and that some actively aspire to the position each year. Because not more than about one hundred fellows may become president in a hundred years, many worthy members never attain that distinction. It can easily be seen why keen rivalry should occur some years, although with few exceptions no unseemly political scrambles have occurred in the thirty odd years during which the writer has been an observer of medical society events. In the earlier years a policy prevailed, presumably a sort of gentlemen's agreement, dating back to a period when the society was very small, that there should be a three year rotation of the presidency between Omaha, Lincoln and rural Nebraska. If anyone still clings to that idea as the policy of the association let him be informed that it has become obsolete and that since 1900 Omaha has furnished 9 presidents, Lincoln 3 and rural Nebraska 12. Omaha has (A. M. A. Directory, 1923) 450 physicians, Lincoln, 177, and rural Nebraska 1,286. The same authority gives Omaha a population (round numbers) 192,000, Lincoln, 55,000 and rural Nebraska over 1,000,000. The population of the entire state is given as 1,300,000 and the total number of physicians as 1,913. If proportion of physicians were to govern in the selection, rural Nebraska should furnish two presidents to one for Omaha and Lincoln combined. If actual population were to be the determining factor rural Nebraska should furnish five presidents to one for Omaha and Lincoln. Happily simple proportion and vulgar fractions do not determine the matter.

An united profession has come to understand that the greater honor belongs to those who do the work—those who read and discuss the papers, who do the committee work, the councilor and secretarial work, year after year and thereby earn recognition. No volunteer organization can long endure and prosper without this as one of the basic principles.

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PERIARTERIAL SYMPATHECTOMY.

Excision of the sympathetic nerves which are said to ramify in the adventitia of the main arterial trunks is an operation which was first performed by Jaboulay in 1889 and reported by Rene Leriche in 1913 when he first published the results of his studies on the periarterial sympathetic plexuses. Since then several others have taken up the study independently and some definite facts have apparently been determined.

In a later communication Leriche states:

1. Excision of periarterial sympathetics causes a transitory contraction of the artery at and beyond the point of dissection which lasts a few hours—3 to 16. This is followed by an elevation of local temperature, an elevation of arterial pressure and an increase in the size of the pulse oscillations. The vaso dilator excitation is transitory and disappears after 3 to 4 weeks. Upon these assumptions from clinical findings the operation is based.

Leriche divides the clinical conditions in which the operation is indicated into two main classes:

I. Stupor arterial and Raynaud's disease, which are due to excitation of periarterial sympathetics.

II. A second type in which there are associations of motor, sensory-vasomotor, glandular and trophic symptoms and even signs of local necrosis.

He argues that these changes must have a common cause and inasmuch as this cannot be in either injury to vessels, glands or skin, in sensory or muscular systems or in the cerebrospinal nervous system, it must be sought for in the sympathetic nervous system which supplies the blood vessels. In some instances he claims to have found anatomico-pathological proof that there are more than normal sclerous adhesions between the artery and the common sheath of the vessels, and the external layer of the artery is more vascularized than normal.

Acting along the above line of reasoning Leriche has treated by perarterial sympathectomy various syndromes in the extremities which showed vasomotor and trophic changes as their most prominent symptoms. In the beginning of 1922 he had performed the operation sixty-four times and reports both brilliant successes and complete failures. The operation consists in dissecting

off the cellular sheath of an artery for a distance of 8 to 10 cm. completely denuding it.

A classification shows that in painful phenomena such as causalgia, the successes vary from 60 to 75%. It succeeded in Raynaud's disease. In painful amputation stumps it is most successful where the pain is associated with vasomotor crises, muscular contractures or convulsive cramps. In muscular lesions only the hypertonic symptom is influenced by sympathectomy. It is of no value in ischaemic paralysis. In trophoedema it is of no value. In trophic ulcers where there is an arteritis or neuritis which cannot be relieved, sympathectomy is of only temporary benefit and the ulcer, though it may heal for a time, is apt to recur. Ulcers forming after nerve section will heal after sympathectomy but removal of the neuroma of the sectioned nerve is a better form of treatment as it attacks the condition at its starting point.

Results after periarterial sympathectomy are not constant. Probably because the etiological factors may not be the same even though the symptoms may be apparently similar. Other observers have tried Leriche's method and report about the same number of successes and failures that he did—and as a rule in cases which fall into the class of vasomotor and trophic changes without assignable anatomicopathologic cause the successes outnumbered the failures. The beneficent effect of the operation seems to be due to a temporary vasodilatation in the part supplied by the vessel upon which the operation is performed. The exact indications for the operation are not as yet definitely known nor can a definite prognosis as to success or failure be given with certainty. It is to be hoped that these points may become more clear as time goes on but the fact seems to be established that periarterial sympathectomy has a distinct field of usefulness in relieving certain cases with painful symptoms due to trophic and vasomotor changes of unknown etiology which up to the present have not been relieved by other methods.

—A. J. Brown.

SELLING MEDICAL KNOWLEDGE AND SKILL

Life insurance is one of the most vital and necessary benefits that modern social organization has to offer to the individual; and yet, it is one of the most difficult things to sell.

It would occur to the average reasoning individual that every man who has lives and futures of children depending on him, and whose ability to provide for them may be at any moment snuffed out, would eagerly seek after an opportunity to safeguard them; yet, he has to be argued and wheedled and cleverly browbeaten into doing so by the nerviest men in the community. Were it left to the purchaser's initiative, few, indeed, would possess the benefit they need so badly; powerful and effective organizations are required to get it distributed as it should be. Such examples in our modern social organization are numerous. The real estate man is one of the great builders of his community; were it not for his organized efforts, the community would grow about as orderly as an ant-hill. But, he is compelled to force his services on people almost against their will.

Medical work is analogous; it is one of those things which the community needs badly, but which is difficult to sell. Of course, people will seek out a doctor for the purpose of having their injuries and severe ills patched up. But those are the lesser functions of the medical profession today. The greater ones of prevention, of early recognition of the seeds of big trouble, of building up a better human race, these must be thrust upon the people whom they are to benefit. The average man still prefers to spend his time and money on movies and automobiles, and to forget what might be his condition if he weren't so lucky. What little prevention and constructive health work we are able to do, we must force on the public with a club; and vast possibilities in the way of preventing suffering and of building up stronger, healthier men and women, are simply untouched by medical men, and undreamed of by the laity.

The greatest benefits to humanity of which medical science is capable, will never be conferred until they are actively sold. Yet, it is not possible for this to be done from individual to individual. A physician cannot approach a "prospect" as a life insurance man can. Tradition is against it; and psychology is against it. You may appear to have designs on a man's money, and he fights you back by the rules of the game like a good sport; but if you appear to have designs upon his health and life, he considers you to have an unfair advantage of him. It is the function of medical organizations to "sell" these benefits to the public; and it must be

done by means of education. It is the duty of medical organizations to lay before the public, at every opportunity, the truths regarding the relations of medical science to the average individual.

Education is one of the greatest duties of organized medicine today. There is a great plenty that the public ought to know, and doesn't; why do we keep it from them? If the average man knew how much we knew that would benefit him and that we do not tell him, he might feel that we are neglecting our plain duty. Medical societies must be teachers of the public; but they are neglecting their duty today.

—Miles J. Breuer.

THE DIAGNOSIS OF EARLY PULMONARY TUBERCULOSIS

Dr. J. M. Mayhew, Lincoln, before the Missouri Valley Medical Society (Medical Herald, Dec. 1923) attacks the Veterans' Bureau schema for classification of tuberculous patients on examination and goes on:

"It is most important for the social fabric of our nation that we throw out all confusing, inadequate, obsolete and unproven symptomatology, classifications and methods. Give a soldier, past, present or future, a diagnosis of incipient pulmonary tuberculosis, he becomes in most cases a government parasite, a 'loafer on the job,' a man who feels that 'society owes him reparation for the awful thing that has befallen him.'

"In civil life the social and economic aspect is as great. Given a diagnosis of positive incipient tuberculosis, a man changes at once, the psychology of his life reverses, his economic status is lowered, his morale is broken and his social position in the world is partially or wholly destroyed.

"Many, by a supreme effort, 'come back'; the majority do not."

The radiograph and the laboratory have offended and confused. "The careful clinician has been the safety valve on the whole and on him must we rely for most of our definite principles in the diagnosis of early pulmonary tuberculosis."

He concludes: "Early pulmonary tuberculosis must be proven according to fixed scientific principles. Carelessness in observation of these fixed rules leads to moral and social deterioration of the patient. No reliance can be placed on the x-ray for positive findings. The diagnosis when made

must read: Tuberculosis pulmonalis, chronic, active. Negative for tuberculosis or at least not proved."

EDITORIAL PARAGRAPHS.

During 1923 but one railway accident involving loss of life occurred in England.

It is estimated by Joslin that one person in seventy-five has, or will have, diabetes.

According to the Journal A. M. A. the typhoid death rate in the entire group of large cities totalling a population of 25,000,000 has fallen below four per cent.

That the Creator made no mistake, is an axiom; but your editor has often wondered why man could not grow bald on his face instead of on top of his head.

There is practically no appendicitis in China. A physician in charge of a mission hospital reports but two cases among 86,000 Chinese patients examined. The rice diet of the Chinese is not productive of this disease.

The development of a test to determine human susceptibility to scarlet fever and the first steps toward a method of immunizing against the disease is announced from Chicago by Dr. George F. Dick and Dr. Gladys Henry Dick, the latter a former Pawnee City, Neb., girl.

A propaganda on eye-sight conservation is being featured in the Saturday Evening Post by the American Optical Co. No particular style of frame, mounting, lens or other material is recommended; the entire message is educational by admonishing the reader to have his eyes examined.

An article entitled "The New Control of Surgery" appears in February Harper's. It is a very fair exposition of what the American College of Surgeons stands for in hospital standardization and the standardization of surgery. Every physician may profit by reading the article.

The problem of what to do in the case of a number of physicians of the state convicted of moral turpitude confronts the state medical examining board and Dr. J. D. Case of the department of welfare. The cases involve two convicted of committing abortions, two selling narcotics, all of Omaha, and one in the western part of the state for adultery with a bed-ridden patient. Let us hope there will be a thorough housecleaning.

PHYSIO-THERAPEUTIC WEEK IN KANSAS CITY, APRIL 10 TO 18

The sixth annual meeting of the Western Electro-Therapeutic Association will be held in the Little Theatre, Kansas City, Mo., Thursday and Friday, April 17th and 18th, under the presidency of Dr. Harry H. Bowing of Rochester, Minn. A cordial invitation is extended to the medical profession of nearby states.

The preliminary program follows:

"Clinical and Histological Observations in the Treatment of Neoplastic Diseases." Dr. William L. Clark, Philadelphia, Pa.

"The Pathology, Diagnosis and Treatment of Skin Diseases," Dr. C. D. Collins, Chicago, Ill.

"Coagulation Essentials" (lantern slides), Dr. T. Howard Plank, Chicago, Ill.

"Electro-coagulation in Cancer of the Uterus" (lantern slides), Dr. A. David Willmoth, Louisville, Ky.

"What the European Clinics Think of High Frequency Currents," Dr. Joseph E. G. Waddington, Detroit, Mich.

"The Use of Physiotherapy in the Reconstruction of the Industrial Injured," Dr. James E. M. Thomson, Lincoln, Neb.

"The Physio-Therapeutic Treatment of Colitis," Dr. Curran Pope, Louisville, Ky.

"The Use of the Cobalt Blue Lens With Ultra Violet Therapy in the Treatment of Luetic Ulcers," Miss Emma Leah Stewart, Louisville, Ky.

"Radium," Dr. Sanford Withers, Denver, Colo.

"Blood Pressure Interpretations," Dr. Burton B. Grover, Colorado Springs.

Dr. R. W. Fouts, Omaha (title not announced).

Dr. Omar T. Cruikshank, Pittsburg. "Bright's Disease Treated by High Frequency Currents."

Dr. E. H. Skinner, Kansas City (title not announced).

Dr. William L. Clark and Dr. T. Howard Plank will hold an operative clinic at General Hospital on Friday.

On Tuesday evening, April 15th, there will be a joint meeting of the association with the Jackson County Medical Society, papers being presented by Drs. Clark and Bowing.

The Western School of Physiotherapy will hold its sixth annual session, under the direction of Dr. Burton B. Grover and associates, at the Little Theatre, Monday, Tuesday and Wednesday, April 14th, 15th and 18th, consisting of demonstrations and clinics. The preliminary session of the School will be held at the Bellerive Hotel on Thursday, Friday and Saturday, April 10th, 11th and 12th, for novitiates; those who have not had the opportunity of attending previous lectures by Dr. Grover. At this session the fundamentals of electricity will be explained by Dr. Grover. This course is absolutely essential to a ground knowledge of electrotherapy.

An elaborate exhibit of physiotherapeutic apparatus will be held as heretofore in the lobby of the Little Theatre; this exhibition alone will be well worth the trip to Kansas City.

Clinics and demonstrations of technic each afternoon and evening. For program address the secretary, Dr. Charles Wood Fassett, 115 East 31st Street, Kansas City, Mo.

THE SOCIETIES.

The Omaha-Douglas County Medical Society held its meeting at the University Club on Jan. 22, 1924. Dr. H. B. Lemere presented a skull for inspection, of a very unusual case of progressive osteomyelitis of the frontal bone. Only a perforated bony framework remained in the supraorbital region.

Dr. W. P. Wherry read a paper on "The Unusual in Para-nasal Sinus Surgery," illustrating his remarks with some 40 very excellent lantern slides. He showed the various types of abnormalities met with in this field of surgery which might make the initial attempt of operative procedure less satisfactory in its curative end results than the general practitioner had hoped for. His paper was discussed by Dr. Lemere.

The second essayist was Dr. B. B. Davis on "What Progress Has Been Made in the Treatment of Cancer." Besides stating his own personal views, he had six very comprehensive charts of U. S. mortality statistics over a period of 30 years, and the end results obtained in various clinics on the treatment of cancer of the rectum, of the lip and tongue, of the breast, stomach, cervix and fundus uteri. His paper was discussed by Drs. A. F. Tyler, Alfred Brown, A. F. Jonas, R. W. Fouts, B. W. Christie and E. Willard Powell.

The meeting on February 13, consisted of two very excellent papers by Drs. F. W. Heagey and L. E. Moon. Dr. Heagey spoke on "Diseases of the Colon," and in devoting about one minute to each foot of the alimentary tract considered, he certainly covered the ground in a masterful fashion. He illustrated his subject matter with x-ray plates supplied by Dr. A. F. Tyler. This graphic representation of the different clinical causes of spastic colon without any haustra at all; visceroptosis; diverticulitis; redundant sigmoid; mucus colitis were beautiful text book pictures.

His paper was discussed by Drs. Simanek, Dunn, Tyler and W. L. Ross, Sr. Dr. Simanek urged an earlier consultation with the surgeon in some of these cases, and Dr. Dunn discussed the innervation disturbances and reflex causes for colonic symptoms such as pelvic disease, gallbladder, appendix and ulcer of the stomach. He also complimented the author for looking at ptosis cases with half-closed eyes. He considered many cases of intestinal obstruction were founded on the basis of chronic diverticulitis and wished to remind those present that papillomata were frequent causes of diarrhea where there was a bloody discharge with little pus.

Dr. Tyler also stressed the point that visceroptosis was of little importance in producing many of the symptoms that formerly were attributed to this type of architecture. The position in which the bowel is found depends on the type of person or build of person that houses these intestinal coils. He laid emphasis on the fact that many of these gallbladder disease processes were accompanied by various manifestations in the colon.

Dr. Ross cited a case of a belated caecum whose emptying time was three to four days.

Dr. Moon's paper on the "Diagnosis of the Common Ano-Rectal Ailments" was a most carefully prepared manuscript. He was prompted to read

such a paper because of the frequency with which he sees such cases which have been improperly treated because of incorrect diagnosis, mainly the result of incomplete examination. It seemed to him that patients with ano-rectal complaints are deprived of the routine methods of examination. He was able to show that obtaining a complete history in these cases gave the physician valuable knowledge and that these patients have a false sense of modesty, and unless properly handled, they prefer to have you prescribe for them without examination because of this reticence. He enumerated the symptoms these patients complain of and gave the interpretations placed upon them. He discussed the common inflammatory lesions external to the anus and the lower portion of the canal, and those above the rectum. The most favorable position for the examination of such cases was discussed minutely as well as the type of instrument used, the Hirschman anoscope being the most satisfactory.

Dr. Moon's paper was discussed by Drs. B. B. Davis and B. W. Christie. Dr. Davis recited a case of the most marked protrusion of the rectum in a child he had ever seen, the child having suffered and screamed for six months. In trying to evacuate the bladder he found the stone which he was able to remove through the urethra of this female child, and in three weeks the prolapse of the rectum was relieved.

Dr. Christie reminded us that the first duty of the consultant was to make a rectal examination, and told how Dr. Dunn had made a diagnosis on one of his patients of carcinoma of the rectum by using this simple procedure.

—Earl C. Sage, Secretary.

Report of the meeting of the Lancaster County Medical Society held January 19, 1924: Dr. J. J. Hompes reported a case of "Frontal Sinus Infection Complicating Extradural Abscess." The patient had shown no signs of brain infection; however, he had complained of violent headache. He would develop a headache at home, but by riding to the office in an automobile, his headache would get better and he would be perfectly comfortable. This relief was supposedly caused by the loosening of the dura and extending the abscess to a larger cavity. The radical frontal sinus operation revealed an area of necrosed bone which upon being removed, revealed the abscess containing about two ounces of pus under great pressure. The patient made a very rapid recovery. In discussing Dr. Hompes' case, Dr. E. B. Brooks called attention to the fact that we should always be on our guard for very minute necrosed areas of bone of the inner plate.

Dr. C. H. Bastron read a paper on "The Diagnosis of Renal Calculi," in which he presented various modes of diagnosis of the condition. Dr. Bastron's paper will be published in the Journal. Dr. Everett Angle in discussing Dr. Bastron's paper, especially called attention to the use of air in the kidney examination. Also of the necessity of rapidity in the use of the cystoscope. Dr. Angle insisted that great care should be used to prevent infection. Dr. Carl Kail showed many x-ray plates of kidney lesions and kidney stones. Dr. C. Emerson spoke of the necessity of using a very weak current in electrical apparatus, therefore, minimizing the possibility of any shock to the patient. Dr. Bastron in closing re-

viewed numerous cases and methods of kidney examination.

Dr. J. E. M. Thomson presented a paper with lantern slides of "The Use of a Lever for Reducing Certain Fractures." He was able to insert the lever between fractures, pry the ends of the bone in place and leave the lever in position until the bones had so thoroughly united as to hold them properly. Dr. R. C. Olney in discussion called attention to the extreme difficulty in holding many bones in position without the lever and of the advantages of the lever, over either wiring or plating the bone. Dr. A. R. Mitchell emphasized the necessity of extreme care in preventing infection. However, he greatly favored the lever rather than other modes of open operation. Dr. Thomson in closing said he had sometimes used long forceps inserted in the ends of long bones bearing these forceps in the plaster cast and allowing them to remain until the bones had healed sufficiently to hold them in place.

Dr. S. C. Clements lead the discussion of the meeting on February 2, 1922. His subject being "Interpretations of Physical Signs as Viewed of Cardio-vascular." He summarized his discourse in three principle points of study. First, visualize the normal physiology and compare the findings as to relative abnormality. Second, direct the examination from two especially fixed anatomical points of the cardiac area, that is, base and apex. Third, observe the blood pressure to determine relative competency of cardiac musculature.

—D. D. Sanderson, Secretary.

The Elkhorn Valley Medical Society met at the Pathfinder Hotel, Fremont, February 14, about thirty-five doctors, most of them from Omaha, Lincoln and Fremont, being present.

Dr. C. A. Roeder, Omaha, gave a "Resume of Present Day Surgical Results in the Upper Abdomen," being somewhat of a critique of the results at present obtained pleading for better end-results. Dr. F. M. Conlin, Omaha, gave a lecture on "The Use of Insulin in the Treatment of Diabetes." (See article in current issue). Dr. W. O. Colburn, Lincoln, read a paper on "Artificial Feeding of Infants" in which he brought out the methods employed by various authorities and elucidated his own methods. Dr. F. W. Heagey, Omaha, gave a paper illustrated by x-ray plates on "Symptoms of Colonic Disturbances." He placed much stress on the value of shadowgraphs in the study of these cases. Dr. Max Emmert, Omaha, presented a paper on the "Appendico-biliary Syndrome." He brought out the fact most of us have overlooked, that infections of the appendix by direct venous and lymphatic streams reach the liver and gall bladder.

Dr. A. P. Overgaard, Omaha, was elected president, Drs. W. O. Colburn, Lincoln, and A. E. Hoff, North Bend, vice presidents, and Dr. Andrew Harvey, Fremont, was reelected secretary-treasurer. The next meeting is to be held at Madison about the first of October.

The annual meeting of the Eleventh Councillor District Medical Association was held in North Platte, Tuesday, February 5, 1924.

The business session was held in the afternoon, at which time the following officers for the ensu-

ing year were elected: Dr. F. M. Bell, Grant, president; Dr. C. C. Wallingsford, Ogallala, was reelected secretary-treasurer. Dr. C. A. Selby of North Platte, is the retiring president, and is councillor of the 11th District.

The evening program and scientific session began with a banquet at 6:30 p. m. at the Palace Hotel, and following introductory remarks by the president, Mayor M. E. Crosby of North Platte, extended a most cordial welcome to the visiting members and guests, following which a most interesting paper on "The Use of Insulin in the Treatment of Diabetes" was read by Dr. Frank Conlin of Omaha. Dr. Robert D. Schrock of Omaha also read a paper on "Pain in the Back" in which that frequent and oftentimes obscure symptom was thoroughly and interestingly elucidated.

Following the discussion of the two preceding papers by various members present, the state association president, Dr. Morris Nielsen, of Blair, gave a most enjoyable and instructive discourse choosing as his subject, "The Purpose of Organized Medicine"; a real message delivered with no small degree of levity, but thoroughly permeated with good sound wholesome reasoning.

Among those who contributed creditably to the discussions of the above papers were, Dr. V. Lucas, North Platte, Dr. E. W. Fetter, North Platte, Dr. Morris Nielsen, Blair, Dr. E. C. Stevenson, Gothenburg. Dr. A. C. Colman, Chappell, gave a most interesting discussion regarding his experiences as state representative from Deuel county, referring explicitly to the extreme lack of interest displayed generally to legislation regarding the medical profession.

The eleventh councillor district under the new plan of districting adopted at the last annual meeting of the state association in May, is comprised of the eight counties of Lincoln, Kieth, Logan, McPherson, Arthur, Perkins, Garden and Deuel.

The Hall County Medical Society met in regular session February 1. The meeting was preceded by a sumptuous dinner served in the Gold Room at the Yancey Hotel. Papers were read by Dr. W. G. Raynor, "Rational Treatment of Diabetes" and by Dr. John B. Riley on "Spasmo-philic Diathesis." Hall County Medical Society has a roster of twenty-seven members. Meetings are the first Friday of the month. A program system has been developed whereby each individual member will at some period during the year present a paper.

The annual meeting of the Seward County Medical Society was held at the Industrial Home, Milford, on Wednesday, January 16.

Twenty physicians were present. The principal address was given by Dr. Morris Nielson, of Blair, president of the state medical society. Papers were also read by Dr. J. C. Thompson and Dr. J. E. M. Thompson of Lincoln and Dr. H. B. Cummins, of Seward.

The election of officers resulted in the selection of Dr. J. E. Meisenbach, of Staplehurst, for president, and Dr. O. C. Nickum, Seward, secretary. Dr. Bert Morrow, Seward, was elected delegate.

The officers of the Keith-Perkins County Medical Society are Dr. F. M. Bell, Grant, president; Dr. E. L. Meredith, Ogallala, secretary-treasurer;

Dr. C. F. Heider, Sutherland, delegate. A meeting January 10, at Ogallala was attended by a dozen doctors and their wives. A four course dinner was served, after which the doctors held a business session and the ladies were entertained at the home of one of the local doctors.

The Woman's Faculty Club of the university college of medicine, Omaha, entertained for the wives of the deans of the several colleges at a luncheon held at Conkling hall on the medical campus, January 23. Mrs. A. F. Jonas, president of the club presided. The university hospital, the new nurses home and other buildings on the medical campus were visited.

HUMAN INTEREST TALES.

Dr. F. H. Vosika, has moved from Ravenna to Howells.

Dr. J. S. Winston, formerly of Edgar, has located at Lodge Pole.

Dr. and Mrs. J. E. Pulver, Omaha, are spending a month in Florida.

Dr. Freda M. Clark formerly of Omaha has opened an office in Tilden.

The office of Dr. L. L. Noble, Holmesville, was recently robbed of narcotics.

Dr. Antone Fehr, Omaha, submitted to an operation for appendicitis recently.

Dr. F. E. Nail is the newly elected president of the Franklin county medical society.

Dr. Frederick O. Beck has sailed on an eight weeks' cruise to Florida, Cuba and Panama.

The villages of Bushnell and Cowles in this state are reported each needing a physician.

William T. Engleman announces the moving of his office from Grand Island, to Mason City, Nebraska.

Dr. J. M. Bauguess, Omaha, has gone to Detroit to work as a child specialist in the Detroit Childrens' hospital.

The marriage of Dr. Frank Stejskal and Miss Helen Krejci, both of Crete, January 24th, at Tabor, S. D., is announced.

Dr. A. P. Condon, Omaha, has recovered from a serious acute throat affection which had confined him to his home for some time.

Dr. L. A. Lansing formerly of Wakefield, for the last two years in New York state and Wayne, has returned to Wakefield to practice.

Dr. Olga Stastny after three years in welfare work in Europe and three months in research work in New York city has returned to Omaha.

Dr. A. H. Farnsworth of Grand Island spent the holidays and the early part of January attending clinics in Philadelphia, New York City and Baltimore.

Dean H. von W. Schulte, of Creighton University College of Medicine, was the guest of the medical staff of St. Elizabeth's hospital, Lincoln, February 11.

The "Rushville General Hospital" is to appear on the scene with fifteen beds, shortly, under the ownership and direction of Drs. W. H. Crawford and J. S. Broz.

Dr. Adda Wiley Ralston, Omaha, who had been at the bedside of her father at Los Angeles, for six months, returned home after the death of her father which occurred recently.

Dr. C. P. Fall, Beatrice, has filed for the nomination for congress from the fourth district. The people of that district might do worse than elect a medical man to represent them.

Professor Henry B. Ward, of the University of Illinois at Champaign, former dean of the college of medicine of the University of Nebraska, spoke to the Surgical Club of Omaha, Feb. 1, on "Alaska."

Here comes the flying doctor again: Dr. E. S. Lauser, Rock Springs, Wyo., was taken over impassable snows by a government airplane to Pinedale, Wyo., 105 miles in fifty minutes, to see a patient.

The staff of the new West Nebraska Methodist hospital is announced as follows: Dr. Earl Griggs, Scottsbluff, president; Dr. F. B. Young, Gering, vice president; Dr. Walter C. Harvey, Gering, secretary-treasurer.

Dr. H. Winnett Orr, Lincoln, attended a Washington conference on vocational rehabilitation of the civilian disabled and spoke February 6, on "Physical Reconstruction and its Relation to Vocational Rehabilitation."

Dr. E. J. Jarmin, a former practitioner of Central City, but for some years a practitioner at Hordville, Webster City, Iowa, and lately of Lincoln, has returned to Central City where he will again engage in practice.

Dr. C. H. Platz, former Columbus physician, more recently of Torrington, Wyo., where he conducted a private hospital, has become a member of the Lathrop clinic, Casper, Wyoming, in the department of diseases of children.

Dr. Margaret Koenig, well known in Omaha and Lincoln, now connected with the children's bureau of the federal labor department, while visiting in Lincoln recently, spoke of some of her experiences while conducting a government health wagon in Tennessee and Oklahoma, before the Sorosis club.

Dr. M. G. Wohl, Omaha, who is taking post-graduate work in Philadelphia was invited to present the subject of Sporotrichosis before the February meeting of the Pathological Society of the College of Physicians of Philadelphia. Dr. Wohl read a paper on a similar subject before the San Francisco meeting of the A. M. A. last June. The paper was regarded as of sufficient importance to be translated for the Spanish Edition of the Journal A. M. A.

NECROLOGICAL

Dr. E. Arthur Carr, Lincoln, Neb., General Medical College, Chicago, 1896; practicing physician in Lincoln for upward of twenty years; for a long time prominent in Democratic political circles; some twelve to fifteen years ago one of the secretaries of the state board of health, former grand master of the I. O. O. F. of Nebraska, died Jan. 25, from an infection following a street car accident nearly a month earlier, aged about 52.

Dr. Clara Hayden, Omaha, Neb.; Iowa University College of Medicine, Iowa City, 1907; a practitioner in Nebraska since 1913; for several years assistant physician at the Hastings State Hospital for the Insane; died in an Omaha hospital the middle of January, aged about 45. Burial at Eldon, Iowa.

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CONTENTS

	Page		Page
Diagnostic Methods, Arthur D. Dunn, M. D.	117	EDITORIALS—	
The Diagnosis of Renal and Ureteral Calculi, Carl H. Bastron, A. M., M. D.	122	Dues	150
The Choreiform Affections in Children, Philip Work, B. S., M. D.	124	Annual Meeting.....	150
Irregularities of the Heart, W. R. Peters, M. D.	129	The Germ of Cancer and a Curative Serum	150
Notes On Clinical Surgery, John E. Summers, M. D.	132	The Poor Boy and Medicine.....	150
Tonsillar Intoxication, Geo. A. Griot, M. D.	136	The Annual Meeting of the American College of Physicians and Congress On Internal Medicine.....	151
Tuberculosis in General Practice, Miles J. Breuer, M. A., M. D., F. A. C. P.	138	Fungous Diseases of Man in Nebraska	152
Plain Facts About Diet, Edward W. Rowe, B. Sc., M. D.	142	The First President of the State Board of Health — Dr. James V. Beghtol	152
Recognition of the Specific Hay Fever Pollens, Frances L. Long, Ph. D.	147	Editorial Paragraphs.....	153
Vaccination, A. P. Fitzsimmons, A. B., M. D.	148	Annual Meeting, Association of American Medical Colleges	153
		Announcement to Doctors' Wives.....	154
		Nebraska State Radiological Society.....	154
		Western Electrotherapeutic Association.....	154
		The Societies.....	154
		Human Interest Tales.....	155
		Necrological	156

DIAGNOSTIC METHODS*

Arthur D. Dunn, M. D., Omaha, Nebr.

As soon as time and energy, beyond that necessary to procure food, warmth, and shelter, became available, man began to study himself, to wonder whence he came and whither he went, why he fell into disease and how he might get out of it. He first attributed his ills to evil spirits, and made efforts to drive out the demons by incantations and sacrifices, an echo from which methods of therapy persists in some of the "cults" of today. Lizards are swallowed in some parts of China because they are thought to chase out the evil spirits which bring disease. Later, man thought disease to be the penalty of sin, and epidemics, the punishment meted out to a disobedient people by a disgruntled and

vengeful God. His first scientific study of disease was by taking its history, by analyzing and comparing symptoms, and by placing in groups those giving similar stories of their sufferings. It was but a short step from an art of healing, based on the story of the patient, to observation and to the correlation of the appearances and actions of the sick. In the eighteenth century, after examinations of dead bodies had become common, symptoms were checked against morbid anatomy, and physical diagnosis began. Auenbrugger published his *Novum Inventum—Percussion*—in 1779, and Laennec his *Auscultation Mediate* in 1819. Most of the nineteenth century was taken up in the development of pathological anatomy and physical diagnosis, so that in the beginning

*Summary of a discussion on "Diagnostic Methods", given at the Third Councilor District Meeting, Columbus, Nov. 1, 1922.

of the twentieth century we had our Neusers and Kovaces with records of one hundred or more consecutive verified anatomical diagnoses, made almost entirely on history, observation and physical examination. In the latter half of the nineteenth century bacteriology was born, and medical men, turning their attention to the ancillary sciences, began to appropriate from biology, chemistry, and physics everything thought to be useful, and the present or "storm and stress" period of laboratory medicine began. Today the practitioner too often gropes bewildered in a maze of new and difficult laboratory methods adroitly put forth by interested proponents; he neglects or is ashamed to use old and tried methods out of fear of being considered old-fashioned; he uses his powers of observation less and less, which atrophy from disuse; he tends to look more and more to a laboratory man or to a roentgenologist for his diagnoses, and to become thereby a discontented, non-progressive parasite on the medical body social. In this present-day whirl of method and theory it might not be amiss for us to spend some time in an attempt to evaluate these fundamental methods of history taking, observation, physical examination, and laboratory.

THE HISTORY

Knowledge obtained by history-taking is subjective and cannot attain to the value of objective information; yet the sequence of subjective events in appendicitis or duodenal ulcer is on a par with and often outweighs physical and laboratory evidence. An x-ray "diagnosis"—I quote the word "diagnosis"—of ulcer of the duodenum, when unsupported by a fitting history, is more likely to be wrong than right. The value of the clinical history often suffers by the failure to make qualitative and quantitative estimates of individual symptoms and to fix the sequence of events. A carefully collected and arranged series of historical data in a gall bladder case on the whole outweighs the evidence obtained by the more spectacular roentgenological examinations. History-taking is prone to become either perfunctory and meticulous, or grossly lacking. Too frequently a mass of isolated data is presented, in which an attack of measles in childhood may be set forth, and a history of repeated sore throat not noted, the effects of which may be far-reaching. If histories are intelligently taken and not padded with much useless

information about ancestors, diseases of childhood, etc., they can be made to furnish information fully as valuable and usable as the Roentgen ray and at less expense. The history also determines the method of attack in investigating a case. If a symptom is of sufficient importance for the patient to major it in the history, it merits investigation. We must not forget that the earliest manifestations of disease often appear in the history long ere they are detectable by present clinical or laboratory methods, and that progress awaits the correct interpretation of early symptoms—a fact recently emphasized by Sir James McKenzie. The value of checking subjective symptoms against objective findings is obvious.

OBSERVATION.

When a friend of mine was told that he lacked observation and his failure to notice a glass eye was cited as proof, he said, "Observation? I just didn't see it, that's all." Though much of our knowledge of the environment is gained by seeing, yet we seem to fail sadly in observation. To observe is to see or hear with some degree of attention, and I am certain that this "failure to register" has been at the bottom of most of my diagnostic errors. It is not so much medical knowledge that is lacking, but it is failure to examine and observe that wrecks us. Often the most important knowledge that we gain in regard to a case is what we see. The color, the expression, the state of nutrition, the attitude, the respiration, muscle atrophies, variations in thoracic and abdominal conformity, etc., give data which, if observed and correctly interpreted, may unreservedly be granted a position along with roentgenological and laboratory findings. It is told of Opplozer, who succeeded Bamberger at the Second Clinic in Vienna, that he received his "call" because when going through the ward as "candidate" he recognized an "aortic nod"—a symptom not appreciated at that time—and said as he walked by: "That man has an aortic regurgitation." I can remember Dr. Frank Billings picking out a miliary tuberculosis from a group of typhoids as he walked through the ward, by the attitude, cyanosis and respiration. The clinical course of the average patient can often be more correctly estimated "over the foot of the bed" than by the more "precise methods of investigation." We do reverence to this fact when we say: "the patient looks better this

morning." Atrophy of the supraspinati, rhombodeii and pectoralis muscles will often draw attention to an early pulmonary tuberculosis, which we should little suspect did we rely solely on orthodox physical findings. We are taught observation in college and in the laboratory years,—(unfortunately, these observations are too commonly of the test-tube and microscopic variety), but how rarely does one hear a clinical teacher say: "What do you see?" Yet the pathologist will hand the student a specimen or slide, and ask him to write down everything that he sees or make a drawing of it, sending him back until a satisfactory drawing or description is obtained. I have repeatedly seen pulmonary infarct diagnosed pneumonia correctly enough as far as the physical signs went, without the physician having noted that the patient sat up in bed, an almost unheard-of decubitus in pneumonia. An excellent physician showed me one day some peculiar, greenish sputum from a negro with pneumonia, which he was having cultured and examined for pigment-producing bacteria; he had not noted that the whites of the negro's eyes were saffron-colored, betraying an intense icterus, the explanation for the greenish sputum. Two years ago I was so interested in the double vision, disturbed superficial reflexes and the spinal fluid changes characteristic of epidemic encephalitis, that I "never saw" a "faded-leaf" cachexia that should have suggested carcinoma at the first glance if that glance had been accompanied by thinking attention. One could multiply such examples indefinitely, for the failure of retinal images to register with sufficient force on our "medical switch-board" is responsible for most of our mistakes. I hold no brief for "snap-shot" methods in diagnosis, but I do wish to emphasize the importance of an analysis of those impressions that come to us as we look at the patient. Findings by whatever method gained must be checked against findings by other methods, and when all methods used lead to the same conclusion, that conclusion is apt to be right. Seeing is the time-honored objective method and it should not be abandoned for complex laboratory and machine-made methods.

PHYSICAL DIAGNOSIS.

Over 160 years ago, Auenbrugger published his "Novum Inventum"—a method for detecting hidden diseases of the chest by per-

cussion. About 100 years ago Laennec brought out his "Auscultation Mediate." Intensive development of physical diagnosis followed, and during the last half of the nineteenth century it reached its zenith. We of today are not the physical diagnosticians that our forebears were. We do not practice the refinements. We have acquired shortcuts, such as the x-ray, the aspirating needle, etc. I remember a heart case that went to autopsy from Kovacs' clinic in Vienna with the diagnosis of a transudate in the left chest. It turned out to be an exudate. Kovacs, in commenting on the error, said: "Of course, the diagnosis could have been made by aspiration, but that is a very crude method." Any method, however "crude," that without harm to the patient leads to diagnostic accomplishment should be used; the more direct the method, the better. In the diagnosis of pleurisy with effusion physical examination is more accurate than Roentgenological, and well-directed aspiration, based on physical findings, with a good needle and syringe, is more certain than either. Before leaving the subject of physical diagnosis I wish to call your attention to the extraordinary possibilities inherent in palpation. The heart borders, fluid levels and consolidation can with practice be more accurately mapped out by palpation than by percussion. I have checked myself repeatedly with the fluoroscope and can vouch for the high degree of accuracy attainable by this method.

LABORATORY METHODS.

We are living in the "laboratory age." Any method that smacks of laboratory precision has the right of way. Old and tried methods are neglected for laboratory "diagnoses" and reports. Clinical laboratories with their "consultants," like toad-stools, have sprung up over night. Roentgenologists who will provide diagnoses while you wait are found at every turn. Medical literature is saturated with laboratory lore and an issue of a medical journal without a new laboratory method or a modification of an old needs an apology. All of this is in a way as it should be. It spells progress, but it is a sizeable job for a practitioner to maintain perspective in the chaos of method and theory. For example, certain "contributions" lead one to believe that blood sugar estimations are a sine qua non in the diagnosis and treatment of diabetes mellitus, that the practitioner who does not have "blood sugar" run is guilty of

criminal negligence, yet blood sugar estimations are of so little real value in the average day's work as to be relatively insignificant. Blood urea and non-protein nitrogen after much trial and discussion, are finally being found not to be the perfect measure of uremia anticipated, although a limited working value for them is established. Prognosis in renal disease has been based on creatinin values alone; yet no less an authority than Folin states that what has been quantitated as creatinin is probably not creatinin. If we use our eyes, tried methods, and established laboratory tests, we can estimate a uremia with almost as much accuracy without as with blood chemistry, unless perchance we have had a wide experience with the method. It is our great misfortune that un-matured laboratory methods are put out as clinically perfected both as to technique and significance long before they should have emerged from the experimental laboratory. The text books are filled with methods that have not withstood the acid test of experience. It requires decades to delete from the pages of the text books prematurely accepted methods commemorating investigators' names. They seem sacro-sanct, and casting them onto the junk-pile where they belong, a desecration. Non-surgical biliary drainage may be cited as a recent example of a method of limited scope, widely merchandized to the profession and laity by enthusiasts before its value was defined. The Rehfuess fractional test meal bids fair to follow soon into oblivion or sharply delimited use, the Cammidge reaction, "tubercle bacilli in the blood," the ninhydrin (Abderhalden) test for pregnancy, the Von Pirquet test, etc. I can even remember when an up-to-date physician would hardly consider a urinalysis unless a quantitative urea had been run. This estimate is rarely asked for today. In laboratory methods, as in dress, the fashions change.

In the application of laboratory methods to clinical medicine certain principles should be kept clearly in mind: First, the laboratory does not make diagnoses—it gives findings and only exceptionally are these findings pathognomonic; there is something wrong with a laboratory that on the basis of a smear returns the report "gonococci present." Second, there must be a certainty on the part of the physician of the reliability of the laboratory findings submitted. It takes years of experience to make even decent tis-

sue diagnoses, yet I am reliably informed that there are not enough capable tissue pathologists to supply one-tenth of the laboratories making such diagnoses. Comment is superfluous. Too frequently the laboratory findings of an inexperienced interne will be accepted as crucial evidence in formulating a diagnostic judgment, while the same inexperienced interne would not be permitted to place skin sutures in a laparotomy wound. Third, the physician should know whether the methods used and the findings furnished by the laboratory are valid. Lastly, the physician must have had sufficient laboratory experience to render his interpretation of laboratory findings reasonably sound.

THE FUNCTION OF THE LABORATORY.

The functions of the laboratory are furnishing data confirmation, and experimentation. The laboratory should furnish findings, not diagnoses, and there is something wrong with the laboratory that purports to make diagnoses for the clinician. Much of our difficulty has come from an incorrect conception of laboratory function. Pathognomonic laboratory findings are few, and even when they fasten the label on a disease they cannot be often said to make the diagnosis. The presence of tubercle bacilli in the sputum means tuberculosis of the lungs, but the diagnosis of pulmonary tuberculosis comprehends much more and entails an estimation of the extent of the disease, the activity and duration of the process, the degree of toxicity, the coefficient of cicatrization and destruction in the individual case, whatever complications may exist, and the environmental, social and financial status of the patient. Obviously, the laboratory has not made the diagnosis. It has merely told us that acid-fast bacilli of a certain morphological character are present in the sputum. We hear much nowadays of "Roentgenological diagnosis." Three cases came back from the Roentgen-ray laboratory, one diagnosed consolidation, one pulmonary tuberculosis, and one a "leather bottle stomach"—linitis plastica. Aspiration revealed fluid in the first case; an autopsy, chronic interstitial pulmonitis in the second case, which was correctly diagnosed clinically with aid of the x-ray; in the third case, that of a "leather bottle" stomach, I concurred in the diagnosis, assuming either scirrhus carcinoma of the stomach or a linitis plastica, but the autopsy showed a normal stomach. It makes one

shudder to think of the number of patients on whom the diagnosis of syphilis has been unnecessarily fastened by one plus and two plus Wassermann reactions in the fifteen years necessary to approach a standardized technique. Much mental suffering and expensive treatment could have been avoided by the proper application of available clinical syphilology, had an unperfected laboratory test, still in experimental stage, been wisely disregarded when it did not check with other clinical evidence. Illustrations of the fallacy of accepting laboratory "diagnoses" could be multiplied indefinitely. I wish, however, to add that there is no desire on my part to belittle the value of the laboratories. I am strong for them and merely wish to put them in their proper place in diagnosis—that of adjuncts.

It might be well for us to consider for a moment why we have lost, temporarily, our sense of values in regard to the laboratory. Several reasons are apparent. First, the desire for short-cuts and the all-too-human tendency to avoid work. Second, we are all still easily filled with awe for the occult and the unknown—a hang-over from the superstitions of the pre-scientific ages. We are most deeply impressed by the things that we know least about and the practitioner is much more ignorant of the limits and possibilities of the laboratory than he is of physical diagnosis. "Associations legitimately applied yield science; illegitimately applied they yield magic, the bastard sister of science," (Sir James Frazer's *Golden Bough*). Too much magic still prevails in modern medicine. Third, the future development of medical science lies with the laboratories. Therefore, it is paramount that we differentiate the experimental and tentative in the laboratory diagnosis from the established. Medical men must have clearly in mind whether they are using methods for the purpose of increasing their knowledge and widening their conception of disease, or whether they are using them as approved diagnostic measures. We need not forget that the greatest boons to the human race have come out of investigation entered into without any thought of practical application. A complete study was recently made by Wilder at the Mayo Clinic of a case of absolute diabetes. This afforded little of diagnostic or therapeutic value to the patient in question, but it added its mite to our knowl-

edge of diabetes. The instinct of curiosity and the feeling of wonder, excited by the biological phenomena that daily pass before him, are necessary attributes of the truly great physician, to whom the laboratory should come as a rest and an inspiration. We should carry with us, into practice the research attitude of mind, the desire to gain knowledge for the satisfaction of possessing it, because it will keep interest alive and make us safer and better doctors. However, in practice the physician must sharply differentiate methods which belong to "research" from those which are part of the established "art and science" of medicine. In dismissing the research attitude of mind in medical practice I shall leave with you this bit of Kipling, "voicing the true spirit of the researcher:"

"Till a voice, as bad as Conscience, rang interminable changes,

On one everlasting Whisper day and night repeated—So:

'Something hidden. Go and find it. Go and look behind the Ranges—

Something lost behind the Ranges. Lost and waiting for you—Go!"

CONCLUSIONS.

(1) The old tried methods of history-taking, observation and physical diagnosis should not be neglected or discarded for new and untried methods, no matter what may be the scientific glamour and commercial propaganda attached to them.

(2) New methods should be tested, evaluated and judged, not advocated.

(3) The scriptural saying modified to fit the case holds: Try all things, if they seem sound or reasonable; hold fast to that which is good.

—630 Bankers Reserve Life Building.

SCIENCE VERSUS NATURE

Methusaleh ate what he found on his plate

And never, as people do now,

Did he note the amount of the calorie count—

He ate it because it was chow.

He wasn't disturbed, as at dinner he sat

Destroying a roast or a pie,

To think it was lacking in granular fat

Or a couple of vitamins shy.

He cheerfully chewed every species of food,

Untroubled by worries or fears

Lest his health might be hurt by some fancy dessert,

And he lived over nine hundred years!

—Prescriber.

THE DIAGNOSIS OF RENAL AND URETERAL CALCULI*

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Prior to the modern development of the x-ray and the cystoscope, the diagnosis of urinary stones was a very difficult undertaking. The practitioner in those days had to rely for his diagnostic data solely on the patient's symptoms and the examination of the urine. Symptoms and urinary findings are valuable aids in the diagnosis even now, but they do not, taken alone, constitute reliable evidence of the presence of renal or ureteral stones.

At first glance a symptomatic diagnosis seems very simple and dependable, for all that one apparently requires to cinch a diagnosis of stone in the kidney or ureter, is a history of renal colics and the finding of blood in the urine. But our confidence in the reliability of this type of diagnosis is easily shaken, if we stop long enough to remember that all the symptoms peculiar to urinary stones are common to pathologic conditions of the kidney and ureter other than stones, and, indeed, to diseases not affecting the urinary tract. Of the latter we need mention only appendicitis, gall-bladder disease, and diseases of the female pelvic organs. On the other hand, not all kidney stones need cause symptoms or blood in the urine, and a correct diagnosis in these cases would be most difficult without some other means.

The problem which confronts the diagnostician of today is not merely to determine the presence or absence of urinary stone, but also, and this is equally important, he must determine the exact location, size, number and shape of the stones, and the amount of damage that has been done to the kidneys. With the aid of the cystoscope and the x-ray the modern diagnostician is well equipped to meet this problem. Without the x-ray he would not be in a position to confirm the presence of stone, except in very rare instances, nor their number, size and location; and without the cystoscope he would be unable to find those stones which are permeable to the x-rays, or to determine the exact location of a stone, or the relative function of the two kidneys. As an exception to this statement may be mentioned cases where the stone is lodged in the lower end of the ureter; such stones can be palpated in female patients through the vagina.

Cystoscopic examination is a comparatively simple and harmless undertaking, especially in female patients, and can be made in very young infants. By this means we are able to make a positive diagnosis in many cases of stone in the lower end of the ureter. In these cases the stone may protrude into the bladder, and is easily discovered upon cystoscopic examination. Or the stone may cause a bulging of the bladder wall, or even a prolapse of the bladder wall near the ureteral opening resembling a polyp or a cyst. A stone in this location can be readily exposed by means of fulguration with an electrode introduced through the cystoscope. By burning away the tissue overlying the stone, the latter can be dislodged and made to drop into the bladder.

If a stone is lodged higher up in the ureter, its presence and exact location can often be ascertained by passing a bougie or a catheter into the ureter, and noting the distance on the catheter when the latter meets with the stone. Obstruction to the passage of a ureteral catheter is by no means always a sure sign of the presence of stone, as a stone may lodge in the ureter without obstructing the passage of the catheter. Stones in the pelvis of the kidney, as well as those arrested in the ureter, can sometimes be diagnosed by passing a wax-tipped catheter into the ureter and noting the scratch marks or small particles of stone on the soft wax. Great caution is necessary when wax-tipped catheters are used, as scratch marks on the wax may be made by forcing the catheter through a fibrous stricture, or in its passage through the cystoscope, especially when the lense-type of cystoscope is used. A wax-tipped catheter should, therefore, never be introduced through this type of cystoscope when trying to verify a diagnosis of stone.

The x-ray is beyond question the surest single means we have of diagnosing kidney and ureteral stones. Good x-ray technic will show the great majority of urinary stones, and furnish us the most reliable information regarding their presence, size, number and location. According to Cole one is not justified in making a negative diagnosis of renal or ureteral stone unless the plate shows the following detail: 1. The spines and trans-

*Read before the Lancaster County Medical Society, Jan. 19, 1924.

verse processes should show distinctly all the way to the tip. 2. The outer border of the psoas muscle must show. 3. The 11th and 12 ribs must show distinctly. 4. If special care in technic is used, the kidney may show in every case.

X-ray examination, not combined with the passage of a shadowgraph catheter or the injection of an opaque medium into the ureter and pelvis, fails to correctly diagnose urinary stones in 10 to 15 per cent of cases in the hands of experts. Gerathy and Hinman report 15 per cent errors; Kretschmer 11 per cent; Kuemmel 8 to 10 per cent; Kieleuthner 4 to 8 per cent. The x-ray plate may lead to a diagnosis of stones where none exist, or it may fail to show those that are present. Phosphate and urate stones cast very faint shadows, or none at all, and are thus easily missed on the x-ray plate. Or the stone shadow may be covered by that of the twelfth rib or of one of the transverse processes, and thus lead to a negative diagnosis. On the other hand, calcified lymph nodes, phleboliths, the calcified tip of a transverse process, may readily lead to a diagnosis of kidney or ureteral stone.

It appears, therefore, that while both the x-ray and the cystoscope are of inestimable value in the diagnosis of urinary calculi, both are subject to certain errors that may lead to a false diagnosis. It is only when we combine the two procedures into a single method, pyelography, that our attempts to diagnose urinary stones become almost 100 per cent efficient. Pyelography is a process of injecting the kidney pelvis and ureter with an opaque substance and taking an x-ray plate of the same. It is a method that enables us to determine precisely the location of a stone in the urinary tract, to differentiate from urinary calculi phleboliths and calcified lymph-nodes, and to make visible on the x-ray plate stones that are not visible by the ordinary technic.

It has been pointed out that good x-ray technic will show the outline of the kidney, but even the best of technic fails to show the outline of the pelvis and ureter, the "stone bearing" areas. It requires more or less speculation, therefore, in the absence of a clearly outlined pelvis and ureter, to determine whether a suspicious shadow in that region is inside or outside of the urinary tract; in other words, whether that shadow

is a calculus or something else. It is otherwise if pyelography has been employed, for here the outline of the ureter and pelvis, as well as the ramifications of the latter in the kidney, are plainly shown, and a given shadow is readily proved to be a stone or not, depending on whether its location coincides with any part of the pelvis or ureter, or is outside of these. It is preferable to take a plate before the pelvis and ureter have been injected, and compare this with the plate made after injection, as otherwise a stone shadow may be obscured by the pyelographic medium. As a rule, a ureteral stone casts a denser shadow with the opaque medium than without it.

Phleboliths and calcified lymph nodes readily lead to a diagnosis of renal or ureteral stone, an error that can not likely occur when the pelvis and ureter have been injected with an opaque medium before the plate is taken. Shadows of phleboliths and calcified lymph nodes will be found away from the pelvis and ureter, while those of stones are found within the same. Where doubt exists whether a shadow that appears to be within the pelvis or ureter, may not be outside, being merely in the same plane, the diagnosis can be made more certain by taking stereoscopic plates with the opaque catheter in place, or by making two exposures at different angles. If the latter procedure is adopted, a shadow that is outside the ureter will not maintain the same relation to the ureter in the two plates, while the shadow of a stone will not change in its relation to the ureter.

Pyelography is invaluable in demonstrating stones which are permeable to the x-rays. By replacing the opaque medium, these stones appear in the outline of the pelvis or ureter as dark areas. In doubtful cases these stones can be made more evident by irrigating the pelvis with a weak collargol solution, and making a plate 24 to 48 hours later, when the excess collargol will have drained off, and enough will be deposited on the stone to cause it to cast a shadow on the plate.

SUMMARY.

1. Personal history and physical examination, while valuable as aids in diagnosis, are not sufficient data to warrant a diagnosis of urinary calculi.

2. A diagnosis of urinary stone should

include presence, size, number, shape, and location of the stone or stones.

3. Cystoscopy gives reliable information concerning the presence and location of a stone.

4. The x-ray, without the aid of the

cystoscope, renders a correct diagnosis in kidney and ureteral stones in 85% of the cases.

5. Pyelography is a valuable method of diagnosing urinary stone, and should be used in all cases under suspicion for stone, if the x-ray plate is negative or ambiguous.

THE CHOREIFORM AFFECTIONS IN CHILDREN*

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The choreiform affections of children are among the most common neurological manifestations confronting the general practitioner. Pediatricist and neurologist alike claim that these conditions fall into their own specialized fields, but the fact remains that these conditions are usually treated throughout by the family doctor.

Given a correct diagnosis, for all that twitches is not simple chorea, in many cases this is as it should be. There are many extraneous factors in any given case, which no one is so well situated to evaluate as is the regular attendant of the family. These factors are so vital to proper understanding of the case that he has unparalleled opportunities for diagnosis.

The purpose of this paper is to discuss a number of conditions, basically different from and yet often confused with minor, true or Sydenham's chorea.

The advance of science in the past few years has changed medical classification from a grouping by symptoms to a listing by causative pathology, either organic or psychic. Diseases classed as "idiopathic" or "etiology unknown" yearly grow scarcer. Likewise has our therapy changed from that addressed solely to the relief of symptoms to a simpler one directed to correction of the basic cause.

It needs no great degree of intelligence to appreciate that of the long lists of alleged causes cited for many diseases, not all can be genuine. It is likewise a fair presumption that these various alleged causes must perforce operate through different channels and produce diverse end results, separate diseases, proper for different therapy.

As an example, consider general paresis. The Wassermann reaction has shown, and the autopsy table and the microscope have

proved, that the old clinical group called paresis frequently included neurasthenia, multiple sclerosis, arteriosclerotic dementia, Korsakoff's psychosis, alcoholic pseudo-paresis, lead poisoning, to mention but a few.

A like condition still obtains in the choreiform field, a number of different conditions still being often classed with the choreas at least clinically. The word chorea comes from the Greek *Xoipeia*, meaning dancing. The older symptomatic nomenclature applied the term to a great group of conditions characterized in common by involuntary movements of the voluntary musculature.

In the early 16th century Paracelsus reported and described a widespread epidemic of dancing mania, not unlike that recently seen in this country. For relief from this obsession, sufferers repaired in great numbers to the shrines of St. Vitus, in Swabia. Paracelsus dubbed this condition, obviously one of hysterical excitement, chorea Sanctii Vitii. In England, Sydenham described the condition which bears his name, some few years later. Though he likewise called it St. Vitus' dance, from his description a totally different malady is indicated. The term Sydenham's chorea properly applies only to what we term true chorea, simple chorea, chorea mollis or chorea minor, not in itself a hysterical manifestation.

Before this conclusion had been accepted, however, many diverse definitions of chorea had been formulated, based upon individual observation and opinion. Reading the older authors one realizes that they often had different conditions in mind.

A list of alleged causes of chorea ranges through pre-natal influence (Sinkler) heredity, age, sex, race, the neuropathic makeup, epilepsy, alcoholism, season, anemia, syphilis, endocarditis, rheumatism, the exanthemata, pregnancy, inanition, imitation, the exogen-

*Read before the 10th Councilor and Republican Valley Medical Society, Holdrege, Nebr., Oct. 25, 1923.

ous and endogenous infections, reflex irritations, such as intestinal parasites, tight prepuce, eye strain, physical trauma, mental trauma of fear or fright, undue excitement of any kind, joy, apprehension, or anticipation and brain lesions of many sorts.

With such a poor idea of the cause of the disease, or rather no idea at all, it is inevitable that the literature should include in the chorea group many conditions whose sole claim to such placement is more or less constant manifestations of approximately choreiform movements. The following miscellaneous group of conditions is frequently listed with the choreas; indeed this list is copied from two of the modern textbooks recommended for the general practitioner of medicine.

True simple or minor chorea of Sydenham
Chronic hereditary chorea of Huntington
Chorea insaniens
Chorea permanens
Chorea pre or post hemiplegic
Chorea of pregnancy
Chorea spastic
Chorea procursive
Chorea fibrillary
Chorea of certain psychogenic psychoses
Chorea electrica of Dubini
Chorea hysterical
Chorea of habit spasm
Chorea of paresis
Chorea of epilepsy
Chorea of thalamic or cerebellar disease
Chorea of compulsion neuroses, the tics.

Even this formidable catalog by no means exhausts the list that may show choreiform movements. Nowhere in neurology is a thorough family history and a searching physical examination of greater importance than in the differentiation of the choreas. Routine examination of the spinal fluid, including at least the cytology, globulin determination, the Lange colloidal curve and the Wassermann test will solve many an uncertain diagnosis. Personal experience with many hundred lumbar punctures indicates that the procedure is practically painless if skillfully done, that the danger is negligible and unpleasant after results are rare if judgment be used in the selection of cases and a few simple rules govern the after care.

The choreas not typical of the syndrome of Sydenham are almost without exception only symptomatic choreas. While the conditions which may offer choreiform movements are

numerous, the vast majority of the choreas in childhood arise from relatively few causes. The choreas fall into five general groups, by etiology.

A. The infectious group of which Sydenham's chorea is the outstanding example. The choreas of pregnancy, the pseudochoreas of metallic poisonings and probably the chorea of cortical epilepsy belong here.

B. The degenerative group, the example of which is Brissaud's chorea degenerans, a senile or presenile form occurring in neuropathically unstable individuals.

C. The electric choreas, comprising that of Dubini which Henoch thinks is the terminal state of certain low grade meningitides and which is usually rapidly fatal, and the electric chorea of Bergeron and Henoch which is rhythmic, lightning fast and is confined to the upper extremities and is probably akin to the myoclonia group.

D. The organic group which contains the so-called choreas of tabes, paresis, multiple sclerosis, lethargic encephalitis, pre- and post-hemiplegia, some of the congenital conditions, the myoclonias and Huntington's familial chorea, which strictly speaking is not primarily a chorea at all but a hereditary progressive organic dementia characterized in a certain proportion of cases by only approximately choreiform movements and in other members of the family by certain other neuropathic abnormalities. This last condition shows definite and rather constant pathology.

E. A psychogenic group which are, strictly speaking, not choreas at all. The clinical manifestations of some of these closely resemble true chorea. Others show but slight similarity but are nevertheless reported by careless or lay observers as chorea. Hysteria often simulates chorea with slavish exactitude. The psychogenic tics and the habit spasms also belong here. Not strictly belonging to this group, but included for convenience in classification, are the forced or automatic movements of the motility psychoses of Wernicke and the catatonic or schizophrenic mannerisms of dementia precox. These last should offer no diagnostic difficulty.

The most important conditions and the ones giving rise to about 98% of the choreiform movements before puberty are, in the order of their frequency: hysteria, the habit spasms, the psychogenic tics, Sydenham's chorea and the various myoclonias. Syden-

ham's will be discussed fully as the basic type and the others considered in the light of their variances from that type.

Other conditions offer choreiform movements it is true, but in them chorea is a relatively small part of the clinical picture and mistakes are well nigh inexcusable.

Solely on clinical evidence is Sydenham's chorea assumed to be of infectious origin. Its definite prodromal symptoms, its regular and characteristic course, the constancy of its symptoms and complications and its tendency to recovery in an approximately regular period, all point toward its being an infection.

Innumerable investigators seeking the microscopic pathology of chorea have been able to report nothing except various grades of inflammation somewhere along the pyramidal tract, and some of them have not even found that. This pathology has not even been constant in character or in absolute location.

Pianese, Maragliana, Westphal and Wassermann, Poynton and Holmes, Meyer, Sander, Rosanau and many others have at one time or another reported what was hoped to be the responsible organism, but none of these "discoveries" have yet stood the test of corroborative findings or obedience to Koch's postulates. The most commonly reported finding is that of some form of streptococcus. The accepted fact that the condition is especially prone to appear in neurotically unstable individuals and has a marked tendency to recurrence opens up the thought that possibly the causative organism is selectively neurotropic or that, which is more probable, it lodges by choice in the locus minoris resistentia of former invasion or congenital inferiority.

Hosts of theories have been advanced to explain the infection and avenue of invasion but beyond saying that it at present appears to be of streptococcic origin and that good seems to follow tonsillar sanitation there is nothing definite.

No definition can be evolved at present without getting into disputed territory better than that by Osler: "A disease chiefly affecting children, characterized by irregular involuntary contractures of the muscles, a variable amount of psychic disturbance and a remarkable liability to acute endocarditis." I feel that chorea is due to streptococcic invasion which settles in deteriorated or basically inferior nervous soil, and that endocarditis represents only coincident invasion

with the same or an allied organism. It should be stressed that many of the cardiac murmurs are not organic but purely toxic, functional or hemic for a simple anemia is constant. This is particularly true for the soft blowing murmurs at the apex. Incidentally, Thayer found that many of the cases with heart murmurs were the cases with well marked attendant rheumatism.

Before puberty the sexes show equal incidence. After puberty it is eight times as common in girls, though often this is but a hysteria on a weakened nervous foundation. No immunity is conferred, three or more attacks being the rule in boys, many more in girls. See gave the average duration in the first three attacks as 139, 80 and 55 days. The full blooded Indian and Negro are practically exempt from true chorea. The diagnosis of true chorea in any case before 4 years and after 16 is open to grave suspicion if there have not been typical precedent attacks. Seasonal influence is doubtful as such; certainly many of the cases do originate in the spring but it is the belief of the author that this is as much a nutritional state due to the reduced physical stamina incident to the conditions of winter living as to any other factor.

Contrary to former beliefs I do not consider it a condition of social station so much as of nutrition. It is certainly practically as common among the society strata as in the working classes. An interesting bit of evidence in this connection is the result of a recent physical survey in two Denver schools. In one drawing from the uppermost social stratum of the city, 59% were found to be under weight and approximately the same number to be in urgent need of dental attention. In a school drawn from the children of common laborers, malnutrition was but 29%. In view of the school epidemics of hysterical chorea this is of great importance.

There is no evidence that any one specific exciting condition initiates the disease. It follows the exanthemata or arises ab initio. Oppenheim believes that it is merely symptomatic and may be caused by any number of poisons. True chorea, however, runs too true to type for this belief to find any general acceptance. There are two major groups of the condition, the simple and the grave or insanians. There are likewise two other forms which are sometimes included with it but which the author feels are not true chorea

but symptomatic, that of pregnancy and the paralytic form. There are, besides, many classifications based on the type of movements but they are of little value clinically.

The common type forms the basis of our description. The grave shows intensification of all the symptoms of the common and is of more sudden and explosive origin. Swallowing and speech become difficult or impossible in this type, sleep is interfered with by the violence of the motions. Fever is present, delirium, hallucinations and delusions appear. The condition usually persists for only a few days, either subsiding or coma appearing and death following. The maniacal cases practically all die.

Chorea gravidarum, unless there is history of previous chorea, is usually not chorea but a manifestation of the toxemia of pregnancy. In the rare true cases the symptoms are the same but cardiac complications are more common. It may persist through lactation or if pregnancy is interrupted. Mortality is about 20%.

Paralytic chorea, the so-called fourth state, is not a chorea at all but a paralytic manifestation of some of the neuritides, usually a hemiplegia, with muscular atrophy.

The onset of true chorea is gradual, the child is peevish, irritable untidy, emotionally unstable and lacking in muscular power, easily dropping things for some days prior to the outbreak of the motor manifestations. Sleep is often disturbed, with night terrors. Mental concentration is increasingly difficult and the child is listless. These findings are the more to be noted as the choreic child has more often been somewhat over bright previously.

The motor features at this period consist of sudden unwilld slight motions or sudden relaxations of musculature. The actual outbreak of the characteristic movements is often explosive, especially if precipitated by chastisement.

In the absence of sudden outbreaks the motor symptoms develop very gradually with complaints of fatigue, pains in the limbs, anorexia and constipation, and often pass unnoticed for several days. The movements begin as a rule in the hands and forearms, only occasionally in the lower face. They involve only one extremity at first but usually soon spread. The affected muscles show three characteristics in varying proportion. (1) Unwilld, but conscious twitching. (2) Inability to maintain steady contraction. (3)

Loss of power. The movements vary in extent and severity from time to time and in location. They are disordered, irregular, arrhythmic, of considerable amplitude and of a rapidity between that of a tic and athetosis. They cease during sleep but may prevent it. They can be controlled during brief action but return worse for the repression. They are exaggerated by emotion and embarrassment.

Speech is interfered with by the contortions of the muscles of phonation and becomes jerky and explosive. Ocular muscle implication is very rare. In the hand, the fingers are first affected and pronation and supination are more common than wrist movements. Shrugging of one or both shoulders is almost universal. Coordination of the hand is difficult and objects are approached by swooping in a zig-zag manner. The lower extremities are as a rule less disturbed. Station is sometimes interfered with and the gait becomes uncertain. The steps are irregular and uneven. The whole body is suggestive of a marionette with grimaces. Trunk muscles are sometimes involved and I have seen one case where there was no manifestation, other than that of the recti abdomini.

The grip is weakened one-half or more and inequalities of pressure are noted. Handwriting varies from normal to meaningless scrawls, and even a complete agraphia. The sphincters are never affected. Sensibility remains normal. The mental disturbances, aside from the temperamental and affective, are hallucinations of sight and rarely of any of the other senses. The psychoses are those common to any toxic state, those of disorientation and confusion. The course of the disease is marked by exacerbation and remission and the recovery is by slow lysis. Recovery is practically the absolute rule except in cases with complications or the chorea insanienis. The duration ranges from two weeks to eighteen months, both extremes being rare. The chorea may at times become chronic or may be followed by a habit spasm or tic which is to be treated by other therapy.

Hysteria is for a number of reasons the most common of the choreiform affections. There are more children unstable in the hysterical sense than are exposed to the causative organism of true chorea. The condition once established is in inexperienced hands more recalcitrant to treatment and there is no tendency to spontaneous recovery.

Hysteria is the great imitator. It imitates

certain disease to perfection, defying detection except by the most skilled. It is more often found among the intelligent than the stupid. The recent war taught us that it is fully as common in males as in females. No age is exempt, cases being reported at two years. No race is exempt and the Poles and Jews are particularly susceptible. It is, or the predisposition to it is, usually inherited and in direct heredity in contra distinction to chorea. Transmission is usually through the mother rather than the father. There is no reason to change the dictum of Charcot that hysteria is always hereditary. All other factors are merely exciting agents. It occurs directly as a result of nervous strain or excitement. The inherent imitative instinct or a subconscious defence reaction is responsible for most of its manifestations.

The agent which seems to initiate the true chorea acts differently upon the hysteric in the same environment, and with the example of the choreic before his eyes or in his memory the symptoms of the hysteric are of the same type, often with an exactitude that defies detection. Any strain or abnormal condition may be the activating cause though there must be the underlying neuropathic diathesis.

The primary cause of the hysterical outburst is an abnormal condition of the mind, involving the sphere of the emotions. There is a disproportion between the intensity of the stimulus and the reaction. The stimulus threshold is lowered. The stimulus need not be immediate and the reaction may be traceable directly, not to present conditions but to memory pictures. The principal mental characteristic in hysteria is an abnormally exaggerated suggestibility. This is a most valuable therapeutic test in differentiating chorea and hysteria. The mental power is unimpaired, though biased at times. Choreia magna, so-called, is not chorea at all but a true hysteria.

The differential points from chorea lie largely in the field of the mental states. There is no mental obfuscation in hysteria, quite the contrary. There is in hysteria a marked suggestibility and oftentimes there is found a purpose being subconsciously served. If at the same time, sensory disturbances, parasthesia, and anesthesia be found either spontaneously or by suggestion, the diagnosis is proven. There are no sensory changes in chorea.

Tic, psychogenous, or habit spasm, is a reflex defensive or voluntary movement which has assumed an imperative character. Though the appearance may be purposive, its pathology is evidenced by the fact that it is not called forth by an external excitation (Oppenheim). The memory image is sufficiently vivid to compel the patient to carry it into execution. It is distinguished from reflex action by the short, abrupt type of the movements and by their frequent repetition. It is usually a recognizable or a perversion of a recognizable act, sucking, nodding, snuffing, gulping, etc. It develops before puberty in children with a general hereditary predisposition. Direct heredity is very rare, indeed.

Tics may resemble chorea but they remain constant, do not extend and show no tendency to spontaneous improvement. Tic convulsif or Gilles de la Tourette's disease, is of this group, but is easily recognized by the explosive vocalization, usually obscene. Judicious mental examination will often show the basic purposive cause. The muscles of articulation, phonation and respiration are principally affected. Intelligence in tic is unimpaired. The patient is free from the malady while attention be distracted through work or mental concentration.

Paramyoclonia multiplex in its severe grades is practically the only other condition that offers serious difficulty. It is characterized by clonic contractions of individual muscles or muscle groups, of the extremities and trunk. Contractions are short and quick and non-synergic. Movements of the members are slight. Contrary to chorea, active movements soothe the spasm. This condition is grave and is identical with the so-called electric chorea of Henoch.

Treatment in these various ailments is often uncertain. Knowing no more than we do of Sydenham's chorea, its therapy is still in the empiric state. Many attempts have been made at specific therapy, based on different conceptions of the etiology. So far there has been nothing advanced superior to time, rest in bed, darkness and quiet, arsenic and iron and supportive treatment. Diet should be non-proteid and heavy. The salicylates have been tried with fair success in the cases where there is marked rheumatic complications, but they ruin the digestion very often and defeat their purpose.

Anti-streptococcic sera have been used on similar grounds but with no result except the

production of a hyperpyrexia which does not seem to do any good.

The hysterias, on the other hand, sometimes do brilliantly under suggestive therapy and counter irritation such as electricity. Psychoanalysis both here and in the habit spasms or psychogenic tics is of value if properly and skillfully done. Care must be used not to follow the belief of Freud that they are all due to sexual psychic traumata, for they are not, and implantation of sex ideas

at the age of most of these conditions would be wrong in view of the almost certain recurrence of the malady.

As has been said, there are many other conditions that may at times and under certain conditions give choreiform movements, but in all these conditions the choreiform phenomena are so obviously secondary to the general condition that physical examination must detect the cause and therapy will be governed accordingly. Metropolitan Bldg.

IRREGULARITIES OF THE HEART*

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A good many years ago I was greatly embarrassed by two heart cases coming in close succession. In the one I said to the people, "I see no reason why this man should die at this time, that I did not believe he could succumb, if he wanted to." I was under the impression that his so-called heart trouble was largely imaginary and in young ignorance "pulled a bone." I left the house but was recalled before reaching my office and he died before I could again reach his bedside, though I lost no time on the return trip. The other case was almost as bad an error. I deduced that the young man's days of usefulness were over. I stated to the anxious parents my belief in the serious nature of the condition; that the situation was very bad and that they could not hope for him ever to be active again. It was up to them to make things as easy for him as possible. He would in all probability live for a considerable time but they should be prepared to see him slip quietly away at any or some future time. To my chagrin, improvement gradually took place and in a recent examination I found a robust individual going about his work on the farm and with an apparently normal heart.

These were two jolts that I have never forgotten. From that time I was rarely without an alibi for use until a more thorough study of the individual condition could be made. In the relations of the physician and his clientele there are two things that the patient and his friends want to know, viz, what is the matter, the diagnosis, and what is liable to happen, the prognosis. All else is of minor importance. Therefore,

how vital to all those concerned including the physician, that one know with some degree of accuracy what he is talking about, especially in the consideration of heart cases.

Rarely ever does one see any patient, no matter what the ailment, without taking into account the heart action. It is a part of the ordinary routine in any attempt at diagnosis or treatment. But it has occurred to me that there might be some question as to how prominent a place we give and how carefully we go into abnormalities of heart action, casually noted in their relation to other outstanding conditions. All this in view of the fact, not to be controverted, that a man lives as long as his heart continues to function adequately and no longer. Therefore, my alibi for inflicting this effort upon your good nature and professional leniency.

Irregularities of heart action is a very large subject and I shall not attempt to cover the whole field. The consideration of the most common examples of irregular heart action, very frequently met with in practice and with which we should all be familiar, should be time profitably spent. No attempt will be made to go into the deeper intricacies as to the mechanisms, theories etc., that bring about irregularity of heart action, other than basic facts not difficult of demonstration. The latter being observable at the bed-side without other apparatus than the stethoscope, the tactile sense and possibly the use of a simple instrument recording blood pressure.

Preliminary to the further consideration of this subject I will quote Martinet as follows: "All recent physiologic and physiopathologic investigations have tended toward the conclusion that the rhythmic succession of

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movements of the heart are caused by a stimulus of as yet unknown nature which, starting in the upper part of the right auricle in the neighborhood of the sinus of the superior vena cava, is transmitted from this point through the auriculo-ventricular septum to the bundles of muscle fibres constituting the myocardium. This apparatus for transmission of the excito-muscular impulse or the neuro-myocardial propagating bundle, has been termed the bundle of His."

One of the most common conditions found upon general examination of patients is a more or less pronounced irregularity of the heart. Their symptomatological significance may be little or great but always pronounced. Certain of these irregularities are as yet not thoroughly or completely explained or explicable, and a few seem almost impossible of solution. A large majority, however, have been quite thoroughly and systematically studied and are understandable from the standpoint of abnormal physiology. In other words about ninety per cent of the irregularities in heart action may be properly interpreted, if care is used in digital palpation of the pulse, accurate auscultation and a close study made of the clinical manifestations that accompany.

In general practice the following forms of irregularity in heart action are most often encountered and I will confine myself to these.

1. Extra systoles or contractions occurring too soon, as it were, premature beats.
2. Paroxysmal tachycardia.
3. Respiratory arrhythmia.
4. Heart block, auriculo-ventricular dissociation.
5. Alternating pulse.
6. Perpetual arrhythmia or auricular fibrillation.

Ordinarily the cardiac rhythm goes on as though there is contraction of the auricles, this definitely followed by contractions of the ventricles. An extra systole is one occurring independently of this orderly sequence. These may be of the auricles, of the ventricles or a combination of both. This condition may be detected by the examiner palpating the pulse as intermittance—a slip, the ordinary beat is followed by a faint beat and then a long pause. At other times only a long pause may be detected. Auscultating the heart brings out better understanding

as you hear the double sound of the preceding systole and the double echo of the extra systole, then a long pause. These may occur in series at regular intervals or quite irregularly and you may have then the bigeminal, trigeminal or quadrigeminal type. These extra beats and premature contractions are by far the most common to be found in practice. For some reason the myocardium has reacted in this way. Why? Perhaps the most common excitor of this condition is some disturbance of gastric digestion. General nervous conditions of various etiology are also often the prime factor. It occurs frequently along with gout. The patient tells you he has felt a distinct thump in the region of the heart, is more or less uncomfortable and feels like he was going to faint. These extra systoles are of slight significance in a cardiac sense unless distinctly connected with some other disturbance of the circulation. The patient usually thinks this phenomena of great importance but it may or may not be. To the physician it calls for a very careful search for other conditions that are not infrequently associated with it and may be of vital value in the prognosis. If along with extra systoles you find changes of blood pressure, dyspnea on exertion or signs of aortic degeneration, be very guarded in your statements as to the probable outcome for you are dealing with a myocarditis the ultimate outcome of which no one can foretell.

Paroxysmal tachycardia is nothing more or less than extra systoles usually of the auricular type coming in uninterrupted succession for a period of time varying from minutes to hours or weeks. The diagnosis of this condition is rather easy. It usually comes on suddenly exceeds 110 beats per minute, ruling out, of course, exophthalmic goitre and any febrile disorder, and the rate is not materially affected by change in position. It can only cause difficulty in diagnosis when hooked up with some other cardiac abnormality. The patient feels a sudden bound in the chest, is certain that the "whole works have let loose" and that he is "a goner" for sure. Generally one will find a history of digestive disturbances, and there may accompany congestions of liver or lungs, cyanosis, venous engorgements or distressing dyspnea. You may be dealing with a neurotic. Usually it ends as suddenly as it began. Rarely one may see a death,

due in all probability to a gradual exhaustion of the heart muscle. Again all depends upon the state of the myocardium. Coming on in a patient with serious cardiac disease, you must again be careful in your prognosis. All the remedies in your bag of tricks may not save your patient.

Respiratory, the next most common form of irregularity in heart action, is of the least significance among the lot. Ordinarily there is a slowing of the pulse with slowing of respiration under normal conditions and vice versa. Normally in man the vagus (pneumogastric nerve) acts as a regulator of respiration and indirectly to some degree influences heart action, striking as it were a balance all to the good. However, in children, in some men and women and in all dogs this condition is greatly exaggerated. The dog pants on very slight exertion, but the heart action is not thereby in like manner intensified. The prognosis is excellent. If sure of your diagnosis just tell them, merely playing dog for a short time, all will be well soon.

Heart block. As has been stated, all normal heart action or rhythm is dependent upon the regular transmission of a stimulus to contraction of unknown origin along the bundles of His to the auricles thence to the ventricles. If this transmission is delayed, interrupted, partially or wholly, as it were by a wet wire, a break in the continuity of the conductor, partial or complete, then we get heart block, in various degrees. Three degrees of heart block have been quite definitely worked out. First, a slight pause between the end of auricular contraction and the beginning of the ventricular. Second, if there is an apparent short circuit from time to time and some of the impulses from auricle to ventricle do not reach their destination. The third degree occurs when all conduction between auricles and ventricles is stopped. The auricles and ventricles contract independently. Their rhythms are different and in no way related. The auricle may still have a normal rate of seventy-two contractions to the minute, while the ventricles will have not more than half that rate.

All investigations point positively to the bundle of His as the seat of disturbance. A majority of the cases coming to autopsy show a diseased condition of this bundle. There are, however, a few instances where heart block may be found temporarily from

the effects of over dosage with digitalis, short term infections, or it may be produced by certain stimulation of the vagus (pneumogastric nerve).

One should look for heart block in cases of syphilis, especially of the nervous system, rheumatism and in all degenerative diseases.

Complete heart block is a heart rhythm of extreme slowness 30 to 40 per minute. The first question then is, have we a slow heart or a slow pulse or both. Careful auscultation should answer this question for combined auscultation of heart and palpation of radial pulse will show that for every pulsation noted there are two contractions of the myocardial degeneration and the prognosis heart, a systole and an extra systole. The second question should be, is the apparent heart block due to conditions external to the heart proper—functional, due to pathological excitation or some disturbance of the vagus. Is it due to some grave organic condition, as syphilis.

Heart block, due to so-called functional causes, is usually found to be only temporary and stops as mysteriously as it began. Heart block due to some organic pathology in the bundle of His is permanent.

Further tests may be made as follows: An injection of atropine paralyzing the heart terminals of the vagus will stop functional heart block for a time at least, the organic type is not thus affected.

The diagnosis of heart block and the degree of first, second or third is of tremendous therapeutic and prognostic importance. If functional it is usually not attended with any great risk to the patient and is at an end when the cause is removed. If organic there is in all certainty important and serious depends upon the degree of block and the extent of the deep seated and extensive involvement through out the myocardium. One may further prophesy as to the probable outcome in individual cases through observation of any syncopal or epileptiform attacks that often accompany, wherein there is a wide variation from mild fainting spells and short pulselessness to a state of unconsciousness with twitchings and convulsive movements of the face and arms.

Alternating pulse may be best described as the occurrence at regular, normal and equal interval of a large and a small beat. This means that the left ventricle is out of

commission. There is a regular alteration of two unequal beats.

If your diagnosis is correct and you have a true alternating pulse do not hesitate to give the most unfavorable prognosis. You can be absolutely certain that you are up against a deep seated myocardial degeneration and that the heart muscle is very near the terminal point of utter exhaustion. It may be a matter of a few hours, days or weeks and rarely more than a few months at the most.

Perpetual arrhythmia or auricular fibrillation was originally called *delerium cordis*. For long it was a puzzle as to the mechanism of its production. There is extreme irregularity in systolic action both as to duration and intensity. It would appear that the whole myocardium is in a state of quiver, that muscle fibres were fragmented and that many, if not all, fragments were a center of contrary impulses, running to and fro without purpose or design, while the unknown, original mother impulse was vainly trying to get some sort of control over what is otherwise an extensive chaos.

For purposes of diagnosis in these cases any heart beat over 130 per minute, is almost always associated with auricular fibrillation, if you can exclude fever, emotion and nervous influences. Any continuous irregularity with signs of cardiac degeneration is

almost always of the type of auricular fibrillations. Further, when there is no apparent cardiac involvement and the irregularity is markedly increased by moderate exercise, it is very likely to be of the perpetual type.

In true perpetual acceleration of heart action there is always weakness of heart muscle, dyspnea on exercise, venous stasis, passive congestion, edema, cyanosis and reduced output of urine. We also have the associated arterio-renal sclerosis. The prognosis will depend in this as in all other irregularities entirely upon the contractility of the heart muscle and the relief that you may be able to administer to associated conditions.

As to treatment, little definite can be said specifically for any of the irregularities of the heart. A number of drugs have been found useful. Among a short list one would name, digitalis, atropine, morphine, strychnine, adonis and their various modifications. Certain exercises and applications have been devised which have a limited therapeutic effect. To me the basic treatment, if any treatment is advisable, when the patient presents himself for your consideration, rests wholly upon the proper deduction of the etiological factors underlying the various irregularities and the induction of proper remedies to correct all irregularities of the entire organism.

NOTES ON CLINICAL SURGERY

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(Continued from March Number.)

SALPINGITIS

The question often arises when a woman suffering with an acute salpingitis and pelvic peritonitis, gonorrhoeal in type, enters the hospital, what are the indices for treatment? The young progressive wants to operate immediately as in an acute appendicitis. True, nowadays, the tubes can be safely removed, but those of us whose experience dates back long enough know that in many instances recovery can, by gentle local treatment, be brought about without resort to surgery. Sometimes, however, a vaginal section with pelvic packing as Prior taught us, must be added. Later all foci which harbor infection about the introitus, vagina and

cervix must be taken care of, and as an aid I am fond of using the cheap but efficient astringent douche (Hirst's) Carbolic acid two drams, acid boric one ounce, zinc sulphate one ounce, dried alum three ounces. Of this, add two teaspoonfuls to two quarts of hot water and use twice daily.

ULCER OF DUODENUM

Three patients diagnosed as suffering from ulcer of the duodenum were referred to my service. In one it was decided to employ the so-called Sippy treatment because of the fact that the history did not indicate real urgency or great chronicity; therefore, the outlook for Nature's assistance might be anticipated, and the elements of risk of a sur-

gical operation avoided. The others were true surgical cases and of the emergency type,—that of the acute perforating ulcer. They were young men of general good health, but had had, from time to time, mild dyspeptic symptoms which they had learned to relieve by the taking of baking soda. The seizures were sudden in each instance, viz., agonizing abdominal pain, anxious countenance, shallow respiration, vomiting; pulse not fast, but weak; rigid, tender abdominal wall, especially high up. Operation was done within four hours from the time of seizure in one case, and within eight hours in the other. In the first the ulcer was excised and the opening sutured and further protected by an omental graft,—no gastroenterostomy done. In the other, because of the callous nature of the ulcer the technique of the excision and sutures so narrowed the calibre of the duodenum that a gastroenterostomy was added. In both cases a suprapubic drain was introduced. Recovery was prompt in each instance. I do not believe a gastroenterostomy is essential as a primary procedure in perforations of duodenal ulcer. It is, however, in the exceptional case as here illustrated. Years ago I rather leaned towards the necessity of this practice and did it usually, and today we have much so-called authority for its performance, but one's judgment after a time becomes based upon his experience. Too much surgery at any time, especially when done upon the critically ill, often ends in a calamity. Should the mechanics of digestion call for a gastroenterostomy after a life-saving but too narrowing closure of a perforated duodenal ulcer was done, then as a safe secondary procedure a gastroenterostomy can be carried out.

MALIGNANT DISEASE OF THE BOWEL

There were three cases of malignant disease of the large bowel and one of the small bowel. One late case of cancer of the rectum suffering from obstruction, had a sigmoidostomy done but the man died. Another of cancer of the rectosigmoid had a sigmoidostomy done with symptomatic relief. One of cancer of the transverse colon was found too extensive in involvement to admit of operative removal. There was a case of cancer of the upper jejunum, one of the rarest of surgical findings, which, because of metastases, did not admit of excision. There were obstructive symptoms however, and I did a

temporizing anastomosis operation. About thirty per cent of all malignant growths of the large bowel are found in the sigmoid and 47 per cent are found in the rectum, yet 52 per cent of all cases of obstruction from these growths occur in the sigmoid and only 11 per cent in the rectum. Obstructions in the large bowel are found seven times as often on the left side as on the right,—knowledge of great value when in indefinite cases, the site of the exploratory incision for temporary life-saving relief is under consideration. Except only in the occasional case of acute obstruction in the large bowel the patient being in excellent condition and early in the attack, I am convinced from much experience that a caecostomy is the safest of all operative procedures; it is life-saving, and anything further that can be done later that is worth while, is much surer of successful technique and permanency of outcome.

Temporizing operations to relieve suffering and at times to enable patients to gain strength and courage to undergo radical procedures are occasionally of great value. They should then take the place of complete operations, so often followed by a mortality,—(the operations of the man without a conscience). Examples: 1, Cancer of the pylorus. A man about 40 years of age with a cancer of the pylorus so obstructing the stomach outlet and involving its neighborhood as to have brought the patient almost to the point of starvation. In this instance I did a jejunostomy and enabled the poor fellow to build up and gain in strength sufficiently to take the train to Sioux City and spend his last days with his friends and family. 2, Cancer of the lower end of the oesophagus. A farmer, middle-aged, very much run-down, scarcely able to swallow thin liquids because of a new growth obstructing the lower end of the oesophagus, had a gastroenterostomy done,—Witzel method. He improved so much as to take on the appearance of a healthy man, and returned home and did farm work last fall. I saw this man several weeks ago; there are symptoms of extension of the disease. The gastroenterostomy is, however, functioning ideally. Several days ago I did another gastrostomy of this type upon a private patient in the Clarkson Hospital, my object being to build up the man's general health for a possible radical procedure. A new operative technique to expose the lower end of the oesophagus and the cardiac end of the stomach has been described

and successfully carried out by Gregoire, a French surgeon. It is done without either opening the peritoneal cavity or the pleural cavity, and has great promise. I want to mention another temporizing operation. A man 67 years old, a great friend of our Hospital, who had been the subject of many attacks of gallstone colic, was admitted as an emergency. His abdominal symptoms were those of the "acute abdomen." He was, however, in addition, a sufferer from myocarditis with auricular fibrillation. There being no signs of decompensation, a general anaesthetic, ether, was given (my practice in such instances). When the abdominal wall was relaxed it was plain that the "acute abdomen" had its focus not in the gall bladder, but in the right iliac region. Upon incision it was discovered that there was a large infecting fluid accumulating between the folds of the mesentery of the lower right colon and caecum (retroperitoneal); appendix normal. After proper protective gauze packing the fluid, bile tinged, was evacuated, gauze and tube drainage established, and the wound only in part closed. No attempt was made to explore the abdomen. It was thought that the fluid was from a ruptured gall bladder; a retro-peritoneal gravity abscess. After many weeks of a most stormy and apparently hopeless convalescence, the man recovered from his abdominal condition. He is up and about, in remarkably fine health, with a heart lesion little suspected by the unknown.

SPLENECTOMY, ONE CASE — ABSCESS OF THE SPLEEN, ONE CASE

It so happened that at one of my clinics last April I had an opportunity to operate upon two cases involving the spleen. In one a young man age 32, the diagnosis of cholecystitis had been made and he had been treated for this in the medical service. The history, symptoms and physical findings seemed to justify the diagnosis and he was referred to me for operation. I opened the abdomen with the intention of removing the gall bladder; there was no pathology to justify it, but the liver was found diffusely cirrhotic and the spleen about three times its normal size. From my experience in other cases the pathology was classified as a relatively early type of Banti's disease, in which I had had success in removing the spleen. Not having authority to do so in this instance, the splenectomy was postponed. Two weeks later, April the 23rd, the spleen was remov-

ed, and fifteen days afterwards the man went home, and is now in apparent excellent health. Several months after the splenectomy he had an inexplicable flare-up, an acute lymphangitis which rapidly subsided. The case of abscess of the spleen was that of a young man 28 years of age, who came to the hospital April the 9th, 1923, complaining of headache, pain in his left side, restlessness, rapid heart, and fever. The history was indefinite; the patient thought he had strained his back, lifting. Two days before coming to the hospital he had had a chill followed by sweating. The history was negative except that he had had a boil on the back of his neck a few days prior to the beginning of his sickness. The physical signs were those of a palpable, tender spleen with muscular rigidity below the costal arch extending well back into the left loin. Temperature 101 F - 103 F. Leucocyte count 18,000 plus. Two weeks later the patient was referred to my service, the temperature running in the neighborhood of 100 F. The physical signs were more positive of abscess formation probably of the lower pole of the spleen. April 23rd an incision was made establishing the correctness of the diagnosis, and a considerable quantity of pus evacuated. Proper protective drainage was established. The temperature and pulse soon dropped to normal. The patient was dismissed, wound closed, on the 18th day, and has remained well since. Except when infection occurs from a neighboring organ (by contiguity of tissue), or following a trauma, or possibly also a twisted pedicle, abscess of the spleen is always an infection from the blood stream. The most common form is that of the upper pole, and it is probably attacked most successfully, after resection of one or two ribs, by the trans-diaphragmatic route, as I have successfully done on the right side in echinococcus abscess of the dome of the liver. Splenectomy is only safely justifiable in central abscess. The removal of an enlarged non-adherent spleen is a relatively easy operation if done through a long left-sided Bevan incision, following the Balfour technique. The removal or repair of a normal sized ruptured spleen, in my experience, is best done by a transverse incision added to the exploratory median or rectus incision which has established the diagnosis. The normal sized spleen cannot be brought out of a Bevan incision. At the time of the two cases reported here I had a young boy in the Clarkson hospital

with a ruptured spleen (automobile accident) and I found it impossible to suture and tampon safely through a vertical incision alone. The boy recovered.

OSTEOMYELITIS

In speaking of amputations it was noted that one of the patients, a boy, lost his limb at the hip-joint because of the fact that an acute osteomyelitis had been unrecognized (treated as rheumatism) until the disease was well advanced, before the patient came to our hospital. The importance of the recognition of an acute osteomyelitis is very, very essential. We see every year in the hospital and private practice many cases of life-threatening or deforming, invalidizing bone lesions, the result of this mistake, often easy to make even by the wary in the beginning of the attack. Osteomyelitis is a bone infection from the blood stream, and when acute it is usually so in children under twelve years of age. In adults, the infection is most commonly due to injury or local infection. The upper end of the tibia and the lower end of the femur are most frequently attacked, and according to Starr "the lower end of the tibia, the lower end of the humerus, the upper end of the femur, the lower end of the radius, and then the ulna, the bones of the tarsus, the crest of the ilium and the scapula". My experience as well as I can recall it, agrees with this estimate. Much has been written about the pathology of acute osteomyelitis and its treatment and I want to outline briefly my own opinion based upon experience and Starr's teachings. We should remember that the onset is very acute, more so than in rheumatism, pain is more severe; local tenderness is rather circumscribed and distinct. A keen observer can see that it is not the joint that is the seat of the trouble. Later the joint does seem involved, but not until the local signs of inflammation have traveled away from the joint too far for a careful student to confuse the condition as having had its origin in the joint. The time for action is early and immediate, and the treatment simple. A vertical incision commencing at the epiphyseal line, splitting the periosteum just below it. This region is known as the metaphysis. Take a drill or gimlet and open the bone downwards, or upwards, to its center, not opening the medullary canal. I believe it is wise to do this whether or no the simple incision at the epiphyseal line evacuates pus, and it often does.

The x-ray has no place in the early recognition of acute osteomyelitis. Let me emphasize the fact that acute osteomyelitis often comes on suddenly with very acute local and general symptoms; there may have been a chill, and a history of exposure to cold weather, possibly some slight injury either of the nature of a fall, blow, or twist. The temperature is apt to be high within twenty-four hours, and at the end of 72 hours the patient's general condition may become serious. I have seen coma and death occur within four days from the beginning of an attack. When patients are seen later, the infection having involved a lesser or greater part of the shaft of the bone, free open drainage should be established to stop the progress of the infection, by incising the periosteum and opening the medulla and allowing the infection to quiet down and assume the reparative stage or chronic form. The treatment of the more chronic types of osteomyelitis is a difficult task and I want to explain briefly what we are trying to do and what our results promise. There were eight cases of osteomyelitis admitted to my service: Femur 2; Bones of the Hand, 2; Jaw, one; Tibia, 4. Only three were admitted in the acute stage of the disease and in each the infection had extended from the original focus so as to call for the evacuation of large quantities of pus. Three of the eight cases had originally been treated for rheumatism. How soon after the acute symptoms of an attack of osteomyelitis have been relieved should an operation be done, and when done, and how should the technique be carried out? What is the best technique for an ordinary case of chronic osteomyelitis, say of the tibia? Personally I am for delay, because these individuals, usually children, do not withstand any prolonged, shocking surgical procedures with loss of blood. I have known death to follow such attempts. Even when the tourniquet had been used, the post-operative oozing is always great. Again, until the line of demarcation has formed, i. e., the separation of the sequestrum, one can never tell when operating, whether or not all diseased bone has been removed. So I am in the habit of following the rule of the older surgeons, not to operate until, as in gangrene of the soft parts the line of demarcation has formed, as in a case of frost-bite, the sequestrum is loose, either within a bony shaft or involucrum, or as is sometimes the case, under the periosteum. Remember, however, this peri-

osteum always has a thin shell of bone forming a part of its inner surface and it is from this that the reproduction of new bone forms. We, in my Clinic, have been for some years following Rutherford Morison's technique in operating upon chronic cases of osteomyelitis, and our results are favorable, more so than those of other methods we have tried, in fact, this method unquestionably has merit. I have been using it in my private practice also. After, in the most painstaking way removing all diseased bone, we mop the cavity out carefully with 95% alcohol; then the cavity is "bipped", that is, packed with sterile gauze impregnated with "bip", a sterile preparation of bismuth and iodoform in equal proportions, with enough paraffine oil added to make a paste. This is covered with an alcohol (95%) dipped piece of gauze, and an ordinary protective dressing applied. The wound may be in part sutured. The bipped gauze is left in place for two to four weeks,

being every one to three days moistened with alcohol. When the packing is removed the wound may be re-dressed with a lighter packing of the same kind, or else a fat transplant^(a) taken from the patient may be used to fill the bone cavity, and the wound sutured. My own work in several private cases, besides those of the Clinic, is very favorable to the bip treatment as the best of my experience. Bip is very useful in all kinds of septic wounds. Doctor Nilsson has had much experience in its use in his private work as well as in helping me in the Clinic. At present one case is being tried out with the fat transplant, which promises well, and we have another in which we are going to try it.

Whatever Rutherford Morison writes can be accepted as the teachings of an experienced surgeon, and I can especially commend his writings^(b) to all interested in general surgery.

(To be Continued).

TONSILLAR INTOXICATION*

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Tonsillar intoxication is a broad subject on which much has been said, and perhaps a great deal more left untold. I shall not burden you with long clinical statistics, nor shall I bring before you anything new, but rather a clinical sketch of my own observations extending over quite a period of time, and a large amount of clinical material. The variations in clinical manifestations so familiar to you all, will make clear the fact that what I am about to say must be taken with an unbiased mind and liberal view.

No age is spared from the various toxic conditions which may justly be charged to the tonsils. From the nursing baby to old age, in all nationalities and sexes, this condition may be found to claim a percentage sufficiently large to call the attention of the profession in general and the specialist in particular. In many instances small tonsils are a great deal more toxic than large tonsils, and are more toxic one time than another. The sad fact is that extremely toxic tonsils may be entirely free from pain and go unnoticed for a long period of time and cause much harm.

The appearance of tonsils does not always give a clear clinical or pathological picture.

A tonsil containing free pus may show no inflammation, and the pus remains undiscovered until operation. The tissue surrounding the tonsils or the pharyngeal wall may show considerable pathological changes which do not respond to local or internal treatment, but subside after tonsillectomy.

The location and structure of the tonsils make the invasion by bacteria comparatively easy. The tonsils offer resistance to many bacteria, while others such as Vincent's, tuberculosis and syphilis destroy the tonsil tissue with ease in a short time.

A large variety of pathogenic bacteria have been cultured from specimens taken from tonsils.

Diphtheria bacilli have been cultured from tonsils of individuals who never had diphtheria. This means that an outbreak of diphtheria is not efficiently or successfully combated until all throats are systematically cultured. This is especially valuable as a preventive measure in schools. From the standpoint of diphtheria alone we can readily see that the tonsils should always receive due consideration, and no physical examination is complete without a careful examination of the tonsils.

*Read before the Twelfth Councilor District Medical Society of Nebraska, at Scottsbluff, Oct. 15th, 1923.

(a) Surgery, Gynecology & Obstetrics, May, 1922.

(b) Surgical Contributions, by Rutherford Morison.

Toxic Adenitis. Under this head we may well consider the anterior and posterior chains of the cervical glands which can break down and suppurate due to toxic absorption from the tonsils. Lingual tonsils and submaxillary glands can enlarge sufficiently to impair the free movement of the throat muscles and the tonsils are not suspected as a causal factor.

The thyroid gland is very susceptible to toxic influences from the tonsils. Acute thyroiditis is frequently found simultaneously with acute tonsillitis, or it may follow an attack of acute tonsillitis. I have seen cases with muscular tremor, rapid heart and enlarged thyroid clear up completely after tonsillectomy. I have seen several cases of thyroid abscess follow acute tonsillitis. There may be an enlargement of the thyroid gland in one or all lobes, there may be tenderness over part or the entire gland. A decrease in the circumference of the neck over the thyroid ranging from three-fourths to two and one-half inches has been noticed after tonsillectomy.

It is not rare to see albuminuria greatly improved or entirely clear up after tonsillectomy.

The toxic effect on the heart, such as fast, irregular, weak or mild systolic functional murmur, has been cleared up by removal of the tonsils. Toxic anemia is frequently seen. I have observed high blood pressure fall ten to twenty mm. after tonsillectomy.

Gastric conditions such as loss of appetite, indigestion vomiting, pain and gas accumulation are frequently due to a purely toxic cause. Some few cases have come under my observation in which a chronic constipation was greatly improved after tonsillectomy.

Muscular weakness, fatigue, tiredness upon rising in the morning and backaches are common findings, due to toxic cause.

Toxic temperature which may be subnormal, elevated or irregular has become normal with no treatment other than tonsillectomy.

Under the toxic effects on the nervous system we must not overlook such findings as numbness, formication, sciatica, neuralgia, pain and headache.

You are all familiar with rheumatic conditions so frequently benefited by tonsillectomy. Mental dulness has been benefited by removing toxic foci. Paralysis of one or more muscles has been found to be due to a

toxic cause. Neuritis and ocular disturbances are quite common. Toxic skin manifestations such as rash, eczema and pimples are not rare. Chronic urticaria has been greatly benefited by tonsillectomy. Bacterial emboli can be carried from the tonsils via the blood stream to distant parts of the body and cause suppuration. Some pustular skin conditions may have their origin in the tonsils.

Dizziness, otitis interna, impaired hearing and otitis media aggravated by tubal inflammation, either acute or chronic, are often found to be due to tonsillar intoxication. I have seen cases in which the hearing distance increased fifty per cent after tonsillectomy. In some instances ear noises, as the patients term it, have been benefited by tonsillectomy. It is not rare to find that vision improves sufficiently to necessitate a change of lenses in three to six weeks after tonsillectomy.

I have seen corneal ulcers increase in size and number under the best known treatment for such conditions, which responded like magic after tonsillectomy.

The health of the grown up, the physical and mental condition of the child, can not be safe or at its best until all toxic influences have been removed. Many times the question is asked, "Doctor will my voice be improved by having my tonsils removed?" In my experience I have found that the removal of toxic tonsils has always improved the voice giving it a greater range, greater ease and flexibility and more volume with increased clearness and sweetness. The voice can also be put to a more strenuous task with little or no fatigue. Chronic hoarseness has cleared up entirely after tonsillectomy.

While these are some of my observations, gleaned from experience no doubt similar to your own, there are many other sources of intoxication.

Although we have no method of estimating the degree of tonsillar intoxication, in quantity or quality we cannot fail to realize its importance from a toxic standpoint either singularly or in connection with other toxic foci. Considering the tonsils from a toxic or infectious viewpoint, we can readily see their far reaching influence, which may not only impair the function of organs, but destroy the organ itself. This should give the tonsils a definite place in summing up the clinical picture of a case. Their importance is too often underestimated.

TUBERCULOSIS IN GENERAL PRACTICE*

A Review of Cases

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As a result of studies in the technic of diagnosis in pulmonary tuberculosis, for which opportunity and stimulus were afforded during the examination of drafted troops, the writer has since that time made a large number of diagnoses of that condition in private practice. He has, in fact, been accused both by professional colleagues and by laymen, of making too many, and of calling everything tuberculosis.

This paper is a critical review of the records of all cases thus diagnosed since the above studies were undertaken⁽¹⁾, and an attempt to draw some conclusions regarding methods of diagnosis and treatment of pulmonary tuberculosis in private practice. The first difficulty encountered was, that not all the case history records were complete and detailed enough to afford sufficient data for analysis. This is a difficulty inherent in private practice. A man who is busy and lacks plentiful assistance has a tendency to do only what is absolutely necessary for the diagnosis and treatment of each individual case; especially in view of the fact that most patients with minor complaints are unwilling to submit to the bother, time, and expense of a careful study, and a considerable proportion of them are really unable to meet the expense.

Attempts were made to overcome these difficulties as follows: A standard routine for examinations with a printed blank form to obviate the necessity of much writing, all apparatus so prepared and arranged as to permit of work being done rapidly, and incessant drill in the actual procedures, so that an examination which formerly took two or three hours, can now be finished in half an hour.

These methods also helped to cut down the expense of the examination to the patient; and the effort was made to study thoroughly, regardless of fees, as many patients as was consistent with keeping the office on a solvent basis. By these means, in spite of the disadvantages of private practice for accurate observation, as compared with insti-

tutional work, out of the 299 diagnoses of pulmonary tuberculosis that were made, 131 cases were studied and recorded with sufficient care and thoroughness to be valuable for study.

Data on tuberculosis from the standpoint of institutional and public health work are so plentiful as to be trite; but there is very little accurate evidence available from the viewpoint of general office practice that covers the entire run of various conditions that present themselves to the doctor. The following examples will suggest why data from general practice have a different significance from those obtained in institutional observation. We were able to follow up 9 cases in which the diagnosis was established and treatment refused; of these, 3 recovered normal health without any treatment or care whatever. Of 16 cases which accepted treatment, but cooperated so poorly as to make the treatment valueless, 5 recovered normal health. During the examination of about two hundred Y. M. C. A. men, opportunity was afforded to study 5 cases which had all the symptoms and physical findings of low-grade pulmonary tuberculosis, but carried on all normal activities, and would not admit that they were sick. These examples bear out the theoretical consideration that the effect on the health of an individual of a tuberculous process depends not on the extent of the process, but on his natural immunity; and that treatment is not specific, but also a matter of building up immunity. They also suggest that there must be large numbers of unrecognized cases of tuberculosis among the general population. The general practitioner's opportunity for the study of these is tremendously greater than that of the specialist or institution. The greatest failing of the medical profession today is not in the highly scientific handling of specialized cases, but in the ability to relieve everyday, minor symptoms; and the general practitioner is the only man who can make any considerable contribution to progress in this field, because he alone has access to the clinical material.

Theoretically speaking, (Tice, Practice of Medicine, VII, 362), out of every ten people that come into your office, one will die from

*Read at a meeting of the Lancaster County Medical Society, Nov. 19, 1923.

1. 800 cases examined in 1919-20 for the U. S. Public Health Service in War Risk Insurance work, are not included here, as they were reported in the American Review of Tuberculosis, VII, 2, February 1922, page 37.

tuberculosis, and nine are infected. The number on which a diagnosis of tuberculosis must be made, will lie somewhere between these two figures. Out of the 2,124 consecutive cases reviewed for this paper, involving all possible general medical and surgical conditions, 299 had a diagnosis of tuberculosis. This is 14% and certainly falls far short of the theoretical 90%. Far from having made too many diagnoses of tuberculosis, we feel that we have been overlooking a good many cases. My efforts have been energetically directed toward recognizing the infection at the earliest possible stage; and since we have diagnosed only 14% of our total cases as tuberculosis, very little more than the theoretical 10% of deaths due to tuberculosis, it would still seem that we are finding only the very few obvious cases. I cannot help laying stress on this point, in view of the skepticism with which many of our diagnoses have been received, both by patients and colleagues. The feeling still seems to persist that there can be no tuberculosis without cough and bacilli in the sputum.

This unwillingness to recognize tuberculosis except in its advanced stage is illustrated by the following figures which we have been able to collect. In 50 of the cases studied, I was able to ascertain diagnoses previously made by other physicians, and these included, in the order of frequency: Focal infection from teeth and tonsils, chronic appendicitis, female pelvic disease, peptic ulcer, and exophthalmic goitre. The reason for believing those diagnoses incorrect is, that the patients failed to improve under treatment directed at those conditions, and improved promptly under tuberculosis management. We were also able to follow up ten cases who refused to accept the terrible stigma of a diagnosis of tuberculosis, and went elsewhere and had other diagnosis and other treatment.

The technic used in diagnosis has been discussed in a number of previous papers.* No case was diagnosed as tuberculosis which did not have evidence present from all three symptom groups, toxic, reflex, and local. The manner of establishing the diagnosis cannot be further gone into here, but is fully dealt with in the papers just referred to, and the appended bibliographies.

*Physical Signs of Tuberculosis, *Nebr. State Med. Jour.*, VII, 2, February, 1922, p. 37.
Diagnosis of Obscure Tuberculosis, *Ibid.*, VIII, 10, October, 1923, p. 347.
Tuberculosis in Discharged Service Men, *Am. Rev. Tuberculosis*, V, 8, October, 1921, p. 678.

The statement found in all of the above papers, that no case should be diagnosed as tuberculosis from superficial appearances and without thorough study, is well illustrated by the following group of 11 cases. These were all tentatively considered to be tuberculosis having all the appearance of it to the snapshot diagnostician and examination was begun on the tuberculosis routine. When the diagnoses were complete, they stood as follows:

	Cases.
Nephritis	3
Hyperthyroidism	2
Diabetes	2
Carcinoma of uterus.....	1
Myocarditis	1
Syphilis	1
Chorea minor.....	1

Of the 299 cases, 279 had no sputum, and only 6 had tubercle bacilli in the sputum. When there is sputum containing bacilli or lung-tissue elements, the lesion is an open one, and the case is far advanced. When the technic of the diagnosis of early lesions is better developed, it will be a disgrace to the medical profession of a community if it contains many such cases; in fact even now it is not difficult to recognize and arrest tuberculosis before it reaches such a stage.

X-ray assistance was called in, in 42 of the cases. In 38 of these, the x-ray diagnosis was definitely that of tuberculosis, and 27 were pronounced active by the roentgenologist. In the 4 cases that were pronounced negative to x-ray, the study of the cases was repeated and the clinical diagnosis confirmed. Various explanations are possible for the disagreement. Early lesions may produce clinical signs, but no x-ray shadow. The interpretation of any x-ray plate is not a mechanical procedure like telling time by a clock; it is a personal matter, like a clinical diagnosis. I have frequently found interpretations on the same plate to vary with different roentgenologists.

An interesting point in connection with the roentgenological aspect, is that clinical signs and x-ray plates do not always agree on the location of the lesion. In this matter I would consider the x-ray evidence as more reliable than the clinical. Numerous cases which had signs only in the apex were found on x-ray plates to have involvement in the hilus, the periphery, or all over the lung.

In 26 cases, the temperature curve was

kept over a period of three weeks, and without exception showed the typical diurnal variation of a low morning and high evening temperature. Of the 131 cases in which the temperature was observed over a few days, 121 had a sub-normal morning temperature. The high afternoon temperature responded more quickly to treatment than the subnormal morning temperature; the latter rarely came up to normal until the patient had regained a practically normal degree of health. I am inclined to agree with the views that consider a subnormal temperature a sign of undernutrition, and to depend upon its return to normal as an indication of recovery.

Blood picture data are available in 73 of the cases. In 14, a leucocytosis, or a higher count than 9,000, was found, but in each one of these cases, an explanation was found for it, the latter including tonsillitis, appendicitis, and acute bronchial and pharyngeal infections. The other figures are as follows:

Leucocytes.	Cases.
8000 to 9000.....	11
7000 to 8000.....	20
6000 to 7000.....	16
5000 to 6000.....	10
Less than 5000.....	2

Fifty-nine cases were normal or below; 48 were below normal the largest number of counts was between 7000 and 8000. The conclusion seems justified, that for diagnostic purposes, a leucopenia confirms a diagnosis of tuberculosis, but a leucocytosis does not speak against such a diagnosis, indicating rather, a secondary or associated infection.

The hemoglobin, determined by the Sahli method, was low in most cases, increasing as the patient improved.

Hemoglobin.	Cases.
80% to 90 in.....	6
70% to 80 in.....	9
60% to 70 in.....	5
50% to 60 in.....	3

The red cell count was less than 5 million in 8 cases out of 73. Blood pressure was low (100 or less) in 30 out of 77 cases in which it was observed; between 100 and 110 in 12 cases; 110 and 130 in 17 cases; over 130 in 8 cases. There seems to be a definite tendency to low blood pressure, which increases with improvement of the general health.

In 12 cases, pulmonary tuberculosis was a diagnosis secondary to other major condi-

tions, including diabetes, nephritis, syphilis, psychosis. In 6 other cases, the tuberculosis seemed to be the principal pathology, but was shown to be directly dependent upon obscure primary conditions. These cases responded very poorly to treatment, until, in 3 cases tonsils were removed, in 1 case a chronic appendix, and in 2 cases infected teeth, upon which recovery from the pulmonary condition was prompt and complete. Such cases are commonly interpreted as being in poor health because of focal infection; I prefer the view that the excess load of the chronic infection lowers the general immunity and prevents the healing of the tuberculosis.

Tuberculosis of other organs, in all cases associated with pulmonary tuberculosis, was found as follows:

	Cases.
Bone	7
Kidney	2
Lupus	2
Peritoneum	2
Bladder	1
Mediastinal glands.....	1
Anal fistula.....	1

Three cases were found associated with a severe psychosis, the latter developing suddenly after a prolonged tuberculous infection. All had psychoneurotic family histories; and my interpretation is, that the lowering of the resistance due to the tuberculosis permitted the psychotic taint to come to the surface. In 2 cases, the psychosis contributed directly to the patient's early death, as proper treatment in such cases is impossible. The prognosis in any case depends on the patient's intelligence and ability to cooperate, to a greater degree than it does on the extent of the pathology.

The matter of the leading or presenting symptom has always been an interesting one to me. Not only can this first complaint of the patient's exercise a great deal of influence on the final diagnosis in the case of medical men who are not quite rigid in their methods of thinking, but it sheds a great deal of light on the pathology of secondary conditions. The following list indicates the manifestations that the patient first noticed, and which he first considered as justifying his going to a doctor. It was not in all cases the first thing that appeared, nor even the most serious, but the one that drove the patient to seek medical advice.

	Cases.
Gastro-intestinal symptoms.....	28
Weakness, early-fatigue, "run-down"	18
Loss of weight.....	16
Thoracic pain	15
"Nervousness"	12
Headache	9
Menstrual disturbance.....	8
Backache	6
Dyspnea, "asthma"	6
Cough	4
Furunculosis	3
Aphthae	2
Nasopharyngeal symptoms.....	2
Pain in right arm or shoulder.....	2
Tachycardia	2
Ascites	1
"Bronchitis"	1
Hemoptysis	1

Some of these symptoms may seem to have little to do with pulmonary tuberculosis, and it is a source of regret to me that lack of space prohibits my taking up each one, and showing how it depends directly on the pulmonary pathology. This subject is fully discussed in the bibliography previously referred to.

Three etiological factors were studied from the standpoint of their usefulness in diagnosis. Even though it is well established that tuberculosis is not inherited, the family history may be a very important confirmatory point in the diagnosis, though the absence of a positive family history means nothing. Of the 131 cases carefully studied, 65 had a clear and definite family history of tuberculosis, and only 10 had a clearly negative family history. Of the remainder, it was not possible in 35 cases to determine whether or not the history was positive, and in 21 cases the history given by the patient strongly indicated tuberculosis, though he himself did not recognize it. That gives 86 out of 131 cases, or 60% with a positive family history.

In each case, careful inquiry was made for some recent debilitating influence, to determine the inciting cause of the activity. Infection and overwork seemed to predominate enormously. In 41 cases, or 31%, the history dated back to an infection, influenza, pneumonia, typhoid, diphtheria, etc. Under overwork we have classed those cases that were undergoing physical effort in excess of what their particular constitution was able to stand, as heavy labor, army service, house-

work; and this group consisted of 42 cases or 32%. Under psychic causes were classed 9 cases, or 6%, including family or financial worry, nervous shock, love affairs, death of relatives, and life among uncongenial surroundings; this group is a small but definite one. Six cases, or 4%, were attributed to pregnancy, and 13, or 9%, to unhygienic living. This latter cause is responsible for many cases among the crowded poor of large cities, and one is surprised to find it as large as this in our section of the country. In 20 of the cases, no inciting factor could be elicited.

Our age data correspond fairly well with average statistics:

	Cases.
20 years and below.....	54
20 to 30 years.....	104
30 to 40 years.....	97
40 to 50 years.....	25
50 years and over.....	19

The highest number, or 35% of the total, were in the third decade of life. Contrary to the prevailing idea that tuberculosis is rare past the age of 40 or 45, we have seen numerous cases of it in middle and old age.

An interesting point was observed with regard to clubbed fingers. In every case (72) in which clubbed fingers were noted, the history of activity dated back for a number of years. In 21 cases where it was clear that the activity was a recent one, less than a year old, the fingers were normally tapered.

The technic of treatment will not be gone into here, but a few words will be said about its results. In general practice, treatment cannot be routine, but must be individually adapted to the circumstances of each case. We have complete records of treatment in 92 cases. Seventy-six cases accepted treatment and cooperated in a fairly satisfactory way, 71 as visiting cases, and 5 in a hospital; of these, 74 improved satisfactorily, and 2 did not. One of these 2 cases was far advanced, and died shortly; in the other, failure to improve is unexplained. Thirty-eight cases were discharged as arrested, up to normal weight, and free of symptoms; 17 are still under treatment.

Of the 92 cases, 11 cooperated ideally; 16 grasped the ideas underlying their treatment so poorly and cooperated so unsatisfactorily, that treatment may as well be considered to have been valueless; of these, 11 failed to improve at all, and 5 improved in spite of their shortcomings. This is one of the many things

that indicate that the tendency in tuberculosis is toward spontaneous improvement if the patient but has a chance, and unless tremendous obstacles are placed in its way. The therapist's main duty lies in the removal of these obstacles, rather than in any active or specific measures.

Nine of the cases got over the worst of their symptoms, and quit treatment before they were discharged; the results were not satisfactory from a scientific standpoint, but the patients were satisfied with their condition. Eleven cases ceased coming, were lost track of, and their condition is not known. Seven cases returned, or were followed up, after being discharged, with the condition relapsed; and in all these cases, the cause of the relapse was a neglect of the hygienic measures recommended as necessary to maintenance of health.

SUMMARY.

The paper is a review of 299 cases of pulmonary tuberculosis in general practice. Difficulties of accurate study, and methods of overcoming them are discussed.

Two hundred ninety-nine out of 2,124 consecutive cases, or 14%, were diagnosed as pulmonary tuberculosis. Only 6 had tubercle bacilli in the sputum.

X-ray findings agreed very well with clinical findings.

Low morning and high afternoon temperature, leucopenia, low hemoglobin, and low blood pressure were characteristic.

Conditions primary and secondary to tuberculosis, etiological factors, and results of treatment were studied.

PLAIN FACTS ABOUT DIET

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It is only in recent years that there has been any scientific interest in the subject of Dietetics. Much information had been collected, but it was little more than a mass of personal opinions. The past few years have been fruitful in the discoveries of chemistry and the physiological processes of the body. It seems almost unbelievable that the human body can maintain health. Nevertheless the human race has existed for a long time. Savages know nothing of chemistry, yet among them health is not the exception and ignorance is bliss.

Real standards exist in dietetics and people must have patience to understand them. Many times rules must be cast aside and common sense be the guide. A scientific knowledge of what constitutes an adequate diet is necessary for all physicians, nurses and teachers of domestic art. It is of great value to every person who would preserve his health and the health of others. Standards prevent us from doing harm unconsciously and show us what liberties may be safely taken. A food may be defined as a substance which we eat that furnishes energy, tissue replacement or assists in any way the chemistry of assimilation.

Scientific advancement in the field of dietetics is neither academic nor is it to be lightly regarded. A wise person will take a

practical view of the subject and try to see where improvement may be made. Uncivilized people may be limited in their choice of food, but in the land of plenty the dangers are great. There is a wide range of selection; restraint is broken down, over-eating is common, and the process of natural choice of food is destroyed. Even if the human race has survived, the standards may be improved. Modern life demands more attention to the diet than ever.

Every person has a constitution. It is that remarkable stability of health which varies but little from day to day, no matter what fuel is being consumed, what actions the body performs or in what environment it lives. It is irrational to abuse this boon, the basis of good health.

Food has three different objects—growth, repair, and the production of energy to be used in or by the body. Children use a part of their food for growth. When that ceases, still a small portion is used to replace the wear and tear. Most food taken may be likened to fuel prepared and introduced to keep the machinery going. Food must be in such a form that it can be utilized. Most of our supply is drawn from the organic world, but synthetic compounds from the inorganic substances are by no means uncommon. Haemoglobin of the blood is made

from materials quite different to it in structure. So it is with most of our body tissues.

The calorie is the standard by which we measure all foods. It is the fuel value in fact. It stands not only for heat but also work. To be exact, a calorie is the amount of heat necessary to raise one gram of water from 0.°C. to 1.°C. A pint of alcohol burning all day will about equal in food value the normal daily intake of our bodies. The name calorie must be fixed in the mind and used when thinking of foods. Otherwise there is no unit of comparison. The heat value of an average diet may be set down at about 2,500 calories. This varies, of course, somewhat according to the individual and the work done. Two thousand may keep one strong in the sedentary life. Thirty-five hundred may be required by a farmer at work. The highest on record is 7,000 calories consumed by the Maine lumbermen in the cold of winter.

There is another term which must become a familiar one to us. Metabolism is that process which takes place in the body whereby food is so altered by digestion, absorption and assimilation that it is changed from the original food and becomes a part of the body, or is used up in energy and the waste by-products are cast off.

Age has a profound influence upon metabolism. For every pound in weight children require from one and a half to two and a half more times food per pound than adults. Their surface is relatively greater and the loss of heat is more. Besides they are more active and there is growth to provide for. Sex has an influence only when the conditions of life are different. Pregnancy, of course, demands more food. Climate has some influence, especially the very cold countries. The food there consumed has a large proportion of fat which is used for heating the body. After temperate climates are reached the food requirements are not so great for higher temperatures. Fat people eat less food because the fat of the body protects them and acts as insulation against loss of heat.

It is often asked, how long can a person live without food? An adult in reasonable robust condition seems to be able, if water is given him, to withstand starvation for as long as six weeks. Exclude water and the end comes in a few days. Death by starvation without water is agonizing, with water it is painless. When food is withdrawn the

protein, carbohydrate and fat of the body is consumed. When the tissue loss reaches fifty per cent death ensues. In times of famine the unfortunate body may maintain a low standard of nutrition, expending at the same time but little energy.

Very few people have less to eat than they need. The appetite fairly proximates the requirements and most people choose what they want. If food is taken in excess obesity results. Seldom is obesity a peculiarity of an individual. If present it is due to excessive eating and deficient exercise. It is harmful particularly on account of the increased waste products which must pass through the organs of elimination. These are irritating and injurious.

A small surplus of food each day will result in obesity. In the great majority of people the body weight remains the same from day to day year in and year out. It is common to see an appetite suited to an active life carried over into years of lessening oxidation. The result in weight is very undesirable. The over-fed man is heavy and of a high color. His sleep is deep and he dislikes to get up. He is an optimist but lacks perseverance. On the other hand, the sparing eater is opposed to eating heavy at every point. He is a light sleeper, endures fatigue and is an industrious citizen.

Proteins are compounds in our food which nearly resemble the leading constituents of muscles and living tissues. They are most valuable foods but the amount necessary is hard to estimate, so nicely balanced is the relation between protein, carbohydrates and fat. If one is absent or deficient in the diet, a certain amount may be replaced by the others. If the average practice of people is a guide, then two or three ounces a day is the amount of protein required. We look at animals whose natural appetite and the supply of food at hand are the only limitations and ask if after all in the human being the instinct is not the safest protection against over eating. However, man lives under such different and artificial conditions that he must make use of the knowledge science gives him. Every farmer knows that his animals may do better if he selects the proper food. We are tempted by the abundance of food and by odors and flavors.

Proteins are used chiefly to replace the tissues of the body. Excess may be used to supply energy but other forms of food are

preferable and more economical for that purpose. Besides, there seems to be some danger from the excess of toxines, or protein by-products, to the organs of elimination.

Stefansson in the far North lived for months on an exclusive meat diet. He maintained apparently perfect health. Evidently protein was in excess. Fat furnished most of the energy. Protein of the lean meat replaced the tissues and was called on to some extent, no doubt, to furnish also some energy. Though no harm may have resulted, this diet cannot be called the ideal, and it may be positively harmful in a warm climate and with less active people.

The objections to the consumption of much protein are definite. First, the proteins in the alimentary canal are liable to undergo decomposition and form by-products which when absorbed in the blood and lymph of the body are carried to all parts of the body. These by-products are especially dangerous to those in sedentary life. The by-products of the sugars and fats act similarly in the liver and blood stream, and are supposed to be more vicious in their destructive action. The effect of absorption of these by-products of protein is called auto-intoxication. In a mild degree it may be known through backache, drowsiness and fatigue. In severe forms it may cause trouble with the joints, anaemia and nervous disorders. The decomposition of protein is brought about by the action of bacteria which normally live in great numbers in the large bowel. To prevent this danger proteins must be kept within safe limits and the evacuation of the bowels promoted by a carefully balanced diet.

The chemistry of the carbohydrates and fats is simpler than protein. Fat is emulsified and furnished as fat to the blood. In the ordinary course of events all the starch and sugars will be offered to the tissues in two or three varieties of sugars. When the oxidation of fat or sugar takes place only carbondioxide or water result. The elimination of the waste is simpler and in the form of carbondioxide in the breath and by the organs of excretion in water. When protein is used for fuel (and not tissue replacement) carbondioxide and water are formed, but also other by-products arise which must be discarded through the same channels. These compounds are highly irritating, and in excess may be dangerous. This difference may be likened to the burning of gas in

which combustion is complete, or the burning of coal with ashes to be carried away. Too little protein causes decline in vitality, lack of endurance for persistent effort, and loss of resistance to infection and disease. Although the organs of the body may functionate with too little protein, carbohydrates, or fats, it is better to have them in the best of condition. Over consumption is our greatest danger. Most people have enough to eat and eat more than necessary. Men err more than women. Hotels and clubs are the places where over indulgence is most often seen.

Various foods differ in the amount of protein they contain. Meat, milk, rice and potatoes are superior. Entire races can be recalled living principally on one of these forms of diet. The meat-eating Esquimaux, the milk-eating Nomadic tribes of the mountains of Western Asia, the rice-eating Orientals and the potato-eating Irish furnish examples of entire nations subsisting mainly on one main kind of food—protein.

Protein differs in kind as well as in quantity in the different foods. Some are of greater value and more easily converted into body tissue, but with thorough cooking the difference between meats is not so great. Red meats may be just as digestible as white, or veal as beef, though, of course, the amount of nutrition varies. Shell fish, crabs and lobsters are highly nutritious if properly prepared. Oysters are excellent food and suitable for delicate digestion. Fat in meat renders the food more difficult for digestion. Pork is not easily cared for because of the fat. Fish may contain much fat and becomes more indigestible as the fat increases.

Fats and carbohydrates have been called the fuel foods. They enter the body to furnish the energy—to supply the current needs and not to become a part of the body. The proper relation between the two has not been determined. It depends much on the individual and the condition of his food. But, if an ounce of fat is to be replaced by carbohydrate, it will take about two and one-half times as much to replace it.

Starch and sugar are about identical in their composition value. Starch must be made into sugar before it is absorbed. One might wonder why it would not be better to eat sugar. Sugars are highly irritating to the lining membranes. They stimulate the taste while starches are tasteless. Starch taken as such into the alimentary canal is

gradually converted into sugar. Thus it does not become so irritating and is more fully utilized.

Carbohydrates and fats answer the same general purpose in the body but the carbohydrates have the faculty of helping in the metabolism of fats. The average amount of carbohydrates required is about 400 grams daily. Diabetics and the obese should take less. The by-products are oxybutyric acid and derivatives, diacetic acid and acetone. These in the blood and urine are considered unhealthy. Their presence causes grave symptoms to arise.

Fats may be reduced very low if the proteins and carbohydrates are abundant. Too much fat may cause acidosis. The surplus, however, appears in the stool and this is a good place to watch for the detection of superfluous amounts, especially in the diet of children.

Fruits are wholesome articles in the diet. They are really carbohydrates, and though the water content is high they possess great value as energy producers. Their effect otherwise depends largely on the cellulose in their structure and upon their acids. They overcome constipation and supply accessory foods to the diet.

Condiments are valuable because of the taste they impart to foods. Proteins and carbohydrates in the pure state are tasteless. Food must be palatable to be taken in sufficient quantities. Condiments depend more on the preparation of foods, as in cooking. The aroma, the taste and the appearance of food is no less important to the ingestion of food than to the actual assimilation in the alimentary tract.

Minor constituents in foods are highly important. They are partly organic and partly mineral. They determine the palatability of the food. Meals must be relished. The most important example is salt. It must be eliminated by the kidneys and sweat glands. In diabetes it is irritating to the kidney and the kidney function may be so poor as to cause its retention in the body and serious consequences arise.

The common beverages are tea, coffee, cocoa, and those with a low alcohol content. These supply mainly fluids to the body, which are essential. An abundance of water assists in the chemistry of the body and also flushes out the excretory organs and prevents the by-products from becoming so irri-

tating to the organs through which it must pass. Alcohol has some food value and as a beverage it may also stimulate the appetite. This does not mean that it is not harmful, for it is well known that the elimination of alcoholic by-products is exceedingly dangerous to the organs of elimination.

Diets having the same caloric value may differ in nutritive value, due to the presence of certain qualities one has that the other has not. Flour illustrates this well. Sylvester Graham advocated the use of the husk as well as the kernel of wheat, and to this flour was given the name of Graham. When the envelope of rice is discarded pigeons cannot live in health on the grain. What happens in the pigeon happens in man. People in rice-eating countries who have a monotonous diet lose weight and strength and develop, where the diet is too restricted to polished rice, a disease called beri-beri. It is a painful nervous disease in which the nerves do not obtain some article of food necessary to health and they inflame, and a polyneuritis develops.

Scurvy is also a deficiency disease. Sailors of old suffered most from their salt meat diet and lack of fruit and vegetables. Scurvy is still common in baby clinics where infant feeding is taught. In the lap of plenty children may develop scurvy, where the diet is restricted to prepared foods. It causes prostration, sore mouths, hemorrhage under the skin and into the ends of the bones. Lime juices and potatoes are known to be efficient in warding off scurvy. They do not convey an antidote to a poison, but supply an accessory food that has been lost.

Rickets is another disease of childhood which is due to the absence of a vital accessory food. Many hold that pellagra is caused by a lack of these important constituents. It occurs in institutions where there is little variety in diet and where perhaps the preparation of foods is at fault. Early the disease attacks the skin and later constitutional symptoms develop. Insanity may develop. It is usually arrested if the diet is enriched. Meat and milk are especially beneficial.

Nutrition may suffer from the narrow selection of food, keeping it in storage or prolonged or high heating. We need a fair amount of raw food. Cabbage and lettuce are our most valuable foods. Roughage is essential. Mixed with concentrated foods it permits of more thorough preparation and

absorption. The vegetables especially carry these accessory foods. Raw milk has them in abundance.

These accessory foods are sometimes called vitamins. Amine is a nitrogenous compound, while the prefix suggests that a vitamine is a food necessary to life. We do not know that all vitamins live up to the definition. Most mothers know the importance of meat juice and fresh fruit juice in the diet of a bottle-fed infant. There are the accessory foods supplied.

Much has been written about these vitamins and many over-stated claims made for their importance. At present three vitamins are recognized. Vitamine A is found in fresh milk, cream, butter, cheese and fresh vegetables. Cod liver oil has this vitamine in great abundance. Age and heat injure. Olive oil, lard and oleomargarine are almost devoid of vitamins. Milk contains also vitamins B and C. In dairy products the vitamins are obtained from the fresh vegetable diet of the cow. Cod liver oil is farther removed from the source of vitamins, but it is derived from the algaes that the fish eat which codfish live upon. As is well known, the codfish is carnivorous. Rickets is the common disease due to the lack of vitamine A.

Vitamine B is found in milk, nuts, tomatoes, beans, cabbage, carrots, and other vegetables as well as fruits. White flour is an example of a food lacking this vitamine. It is absent in meat muscle but present in the flesh of parenchymatous organs. It is absent also in polished rice. Its absence causes beri-beri, a disease that has affected whole armies. Enrichment of diet causes the symptoms to quickly disappear.

Vitamine C is found in the fresh fruits, grape fruit, lemons, and oranges in abundance. It is also in parsnips, spinach, potatoes, peas, lettuce, egg plant, cabbage and tomatoes. Its absence causes scurvy. This disease is almost unknown since the cause has been learned, but babies are frequently seen afflicted with the disease. They rapidly recover on fresh fruit juices and enrichment of the diet.

Modern methods of cooking with high pressure sterilizers tend to impair or destroy the vitamins. In the midst of plenty starvation may occur. The accessory foods are essential to health. It does not require a very great amount of trouble to have all that

are necessary. Milk, raw tomatoes and cabbage will supply all of them in abundance.

Careful observation shows that the individual differences between people in health are very slight. Most people can eat the same kind of food and preserve the same degree of health. The difference between large eaters and small eaters is greatly exaggerated. Probably 500 calories of intake per day makes the greatest differences that arise. The output of energy from food is about the same in different people. Except in a few diseases the basal metabolism rate varies but little. It is remarkable how little, even in disease, this phenomenon is altered.

After all, the alimentary canal is a most efficient machine. Seldom is more than ten per cent wasted. It may be as low as five per cent. Thus it is impossible for some people to get much more out of their food than others. It is usually a difference in the amount of food that is eaten. Prolonged mastication will not lessen the waste very much. Exclusive diets of nuts or other articles of diet may improve the health by establishing a regime or lessening the habit of over-ingestion of some other foods, but the most good arises from a well balanced diet and attention to fresh fruits, vegetables and milk.

The diet must satisfy the food requirements. It must furnish suitable constituents and it is better that these should be derived from numerous rather than a few sources. Variety should be furnished from day to day. It is important that food appeals to the appetite. Our liking is as a rule the guarantee of digestion. Fickleness in eating is largely a matter of habit, and a very bad habit, too. Most of these habits are acquired in childhood and usually from parents who themselves are careless. Happy is the man who likes many foods. Whimsical ideas should be sedulously avoided. Self denial in eating is a virtue. Abstemiousness is usually rewarded by greater endurance, freedom from complaints, happier disposition and longer life.

A PUZZLE

When one doctor doctors another doctor, does the doctor doing the doctoring doctor the other doctor like the doctor wants to be doctored, or does the doctor doing the doctoring doctor the other doctor like the doctor doing the doctoring wants to doctor the doctor?—The Medical Quip.

RECOGNITION OF THE SPECIFIC HAY FEVER POLLENS

Frances L. Long, Ph. D., Tucson, Ariz.

Ecologist, Desert Laboratory, Carnegie Institution of Washington.

The physician who has taken no particular interest, heretofore, in botanical matters, will be surprised at the ease with which pollen grains can be studied under the microscope and the variety and beauty of form which will be disclosed. Instead of the tedious routine of making cultures and smears as needed for the study of pathogenic bacteria, a mount of pollen grains can be made by shaking the blooming flowers or scraping the anthers above a drop of water on a slide. The mount is ready to be examined under the microscope as soon as the cover glass is applied.

Pollen grains may be spherical, oval, triangular, etc., in form, and the surfaces are sometimes smooth, but more often covered with striations, pits, markings of various intricate design or covered with spiny projections. Because of these differences in appearance, it is fairly easy to distinguish the pollen grains of many of the plants causing hay fever. In the case of closely related species or the varieties where the pollen grains are very similar, the positive identification can only be made when the source of the pollen has been found and the plant itself identified.

It is important to find out, each year, what plant species are coming into bloom when the hay fever cases begin. If physicians would make records of the period of pollen production of these offending plants, sufficient data would soon accumulate so that for any community the probable date for the beginning and ending of the various types of hay-fever would be known and the time for preseasonal treatment could be regulated accordingly. Weather conditions affect the period of pollen production so that there will be some variations each year.

A local diagnosis, in which all the hay-fever producing plants within a range of one or two blocks of the patient's home are charted, accompanied by the use of pollen plates in the patient's room at night, gives definite information as to the cause of the trouble and the particular pollen treatment required.

The necessity for the use of a home survey is well illustrated by the case of a patient who had always resided in Colorado Springs, but failed to react to the pollen ex-

tracts of 29 plants species occurring there which might have caused hay fever. Another case was that of a physician himself, who was tested with 36 extracts, all of which gave negative reactions. Later a botanist was called in consultation and found *chenopodium album*, lamb's quarters, growing in the yard around his home. The patient reacted to the extract of this pollen and as a result of preseasonal treatment he has been practically free from trouble for the past two years.

The futility of the diagnostic methods which have been in common use is shown by the following case: A patient from the middle west who had been a hay-fever sufferer for many years went to a well known specialist in the east for diagnosis. The physician asked no questions as to what part of the country she came from, or the history of her earlier attacks. He proceeded, however, to test her with the 30 pollen extracts at hand and found that she gave no reactions to any of them. When she returned to her western home, local diagnosis showed the plant to be the common sage of that region.

The particular pollens which are in the air of the patient's bedroom and which he has probably been inhaling, may be accurately determined by the pollen plate method. A glass slide or Petri dish is smeared with any moist sticky material as soft gelatine, vaseline, glycerin, etc., and this plate exposed in the patient's room at night at the onset of the hay-fever trouble. If the slide is examined under the microscope the next day, several kinds of pollen grains will probably be found collected on the slide. By comparison with the size and form of the pollen grains on the plants around the patient's home, the plant or plants which are most likely to be causing the trouble will be recognized. If the pollen grains are allowed to remain on the slide longer than over night, they are apt to germinate or by absorption of moisture become distorted and then cannot be identified. Thus, instead of trying out the patient's sensitivity to a long series of pollens to which he is never exposed, the list required will be narrowed down to one or two selected by these methods.

Specialists in this line, such as Dr. Grant Selfridge of San Francisco, Dr. A. H. Sanford

of the Mayo Clinic and Dr. W. V. Mullin of Colorado Springs, employ a botanist who makes the survey and pollen plate diagnosis for these cases. This is impractical for the general physician, but it might be possible to cooperate with the better trained teachers

of botany in the high schools. Where this is not possible or satisfactory, the physician could get the plants identified by sending them to the Botany Department of the State University where they are always glad to name them.

VACCINATION*

A. P. Fitzsimmons, A. B., M. D., Tecumseh, Nebr.

I have not taken this subject thinking I could offer anything new or revolutionize the work that has been accomplished along this line. The medical profession is familiar with the observations and research work of Edward Jenner, who gave the results of his observations to the world in 1798 in a small work dedicated to Parry of Bath. This book was followed by five others during the eight years following his first announcement. These books or pamphlets were reports of a series of experiments and improvement on technique up to the stage of recommending the use of the ivory points.

The technic advised by Jenner with very little variation was followed for almost one hundred years, for during the early part of the present century the Alexander ivory point was quite prevalent. It is still an open question if the technic used by Jenner has been improved by a large majority of the practitioners.

Regarding the manner of obtaining the virus, various methods have been devised. At one period throughout the United Kingdom during smallpox epidemics vaccination was performed by attendants taking the virus from a pustule of a well developed case of smallpox. This procedure was carried on to such an extent, and the crude methods used produced so many bad results, it was forbidden by law.

The methods of acquiring the virus are familiar to all, therefore, it is of but little use to dwell upon this point. The points I wish to emphasize are, the great benefits derived; the proper administration; and, is not the medical profession in a measure to blame for the fight made against this preventive measure by various anti-vaccination societies and other cults?

The benefit to humanity can never be estimated. This is more noticeable in the trop-

ics where there was but little attention given to preventive medicine, where one will see the loss of eyesight due to the smallpox infection, the scarred features, and other bodily disfigurements too numerous to mention, and see this same class of people fifteen years later and note the difference in the facial aspect of the younger generation who have had the benefits of vaccination. This should be enough to convince the most narrow minded; but such is not the case as these same cults and societies work overtime trying to convince themselves of the great crime of compulsory vaccination. Most of the cults and societies are among our own people, for the people in the tropics can readily see the benefits and are anxious to protect their children against the disastrous effects of this disease.

My first large experience in this work was in the army in 1898-99. As soon as we were settled in camp, orders came to vaccinate all of the troops. This was carried out with the use of the ivory point made by the Alexander company. After landing in Cuba all troops were ordered revaccinated, again using the ivory points. The system in vogue in the army at that time was to scarify in two places on the arm, some using a small scalpel for scarifying and some the points only. The results obtained were variable. The method used in our immediate command was to sterilize the arm with water and alcohol and apply the vaccine by tattooing a couple of small places on the arm, the scarification being no larger than a split pea and just enough of an abrasion to cause a slight exudate of serum. Stationed near me was a medical officer, who outranked me, who scarified by taking a couple of long slashes, in some instances over an inch long, often bleeding the soldiers severely. I had an opportunity of observing over five thousand cases vaccinated in the manner described. Among the five thousand there occurred two

*Read before the Third Councilor District Medical Society meeting, Table Rock, Nebr., October 23, 1923.

fatal cases of tetanus that had been vaccinated by the long scratch method. There was a large number of infected arms, at one time almost fifty per cent of the entire command were unable to do the ordinary duties of a soldier. Most of the cases could be traced to faulty technic and carelessness of the soldiers after the arm began to swell.

In managing the soldiers for the Philippine service it was a little different. They had a thirty day voyage before arriving at their destination. The first week aboard they were lined up and vaccinated after the manner previously described. Many of the men had gotten wise to a method of preventing the virus from taking by washing the arm in a bichloride solution strong enough to destroy the virus, but in ten days an inspection of all of the arms was made and the ones which showed no signs of vaccinia were revaccinated. Here I began a little study to avoid the unnecessary work of doing our work over. We were still using the ivory points. I took a small amount of sterile water, about one-half an mm. to the point, and soaked the points, making a solution, and as each soldier appeared with no sign of vaccinia I would inject about one drop of the solution just under the derma, being careful not to go deeper than the vascular layer of the skin. Our next inspection showed 95% of the men had well marked vaccinia, with no bad results and a mark no larger than an ordinary pock mark. Upon our arrival in the Philippine Islands all were revaccinated with the native virus made from animals of that climate. Only a very small percentage of the men were susceptible to this revaccination.

Since that time I have used the hypodermic method of vaccination to a very large extent and I have had no bad ulcers following this method. I vaccinated my small daughter by this method with a beautiful result. She has been revaccinated by several other physicians to comply with the numerous health regulations in foreign countries and the vaccination has never taken since the initial hypodermic vaccination.

The point I wish to emphasize is more care in vaccination, using the hypodermic method more, as it is more easily administered, and the lessened danger of any bad after effects, little if any necessity of bandaging the vaccinia. I have found the shields and coverings of no value, in fact

they are injurious, often causing an irritation of the skin, itching, and the patient's tendency to rub the itching place causes the vaccinia to spread and often causes infected ulcers to form outside of the area of the vaccinia, producing a large unsightly scar, which is not a true vaccinia scar, but one of outside infection, all of which can be avoided by using the hypodermic method.

Another point I wish to emphasize is the work of Jenner. Had it not been for his investigation, for his work as a forerunner, the labors of Pasteur, Koch, Eberth, Klebs, Reed, Carrol, and Lazear, the American Typhoid Commission no doubt would not have been recorded in the bright annals of preventive medicine.

In closing I wish to quote from an interview of the late Wm. Osler to a London newspaper as to why he opposed the various anti-vaccination cults. Osler said: "Allow me to select ten medical men who are well protected by vaccination, and ten laymen who have not been vaccinated. I want three members of Parliament, two judges, the other five to come from leaders of the various anti-vaccination societies. The next severe epidemic of smallpox we will all go and expose ourselves to the infection, and we will guarantee good care to the ten unvaccinated and a decent burial to the 50 per cent that die and extend our lifelong sympathy to the remaining ones that recover and go through life horribly disfigured."

The diagnosis of calculous disease of the common duct rests upon colic, icterus, and sepsis, and the symptoms occur in that order, and one is impressed by the fact that at the time the patient presents himself jaundice is absent in about 25 per cent of cases. Inquiry, however, will reveal that in the larger proportion of cases there is a history of a jaundice with preceding colic.—Dr. George Gordon Heyd (N. Y. State Jour. of Med.)

The untrained man who acquired a smattering of technic for a few intranasal operations, but knows little or nothing of the diagnosis of sinus disease, is doing an infinite amount of harm by subjecting patients to unwarranted operations on the nose in the hope of curing headache which is not due to any nasal condition.—Dr. George E. Shambaugh (Minn. Medic.)

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*Annual Meeting, Omaha
May 13, 14, 15*

DUES

All members who have not yet paid their dues should do so at once. This is the last notice before the Annual Meeting, and those who are delinquent at the time of the meeting are, at least legally, not entitled to attend. This rule has never been enforced rigidly, but at the demand of one member it would have to be. Also, when delinquent you lose your Journal and also the protection of the Defense Fund. None of these things should you allow yourself to do. Therefore, send your dues to your local secretary at once.

ANNUAL MEETING

The Annual Meeting, May 13-15, 1924, is just one month away. While it is too early to be able to announce the programme definitely, this meeting will be the best that this Association has ever held, if it can be made so by those in charge of the various departments. The programme and various items of entertainment, however, are well enough along so that the secretary feels that he is safe in predicting the best meeting that we have ever had. Therefore, let every member make his plans now to attend the session and make it a record in attendance also.

THE GERM OF CANCER AND A CURATIVE SERUM

We may be on the eve of a momentous discovery pertaining to cancer. The Nebraska State Medical Journal is not a sensation monger; but the enthusiasm and apparent honesty of purpose behind a statement made privately to a coterie of medical friends in Omaha a few days ago, as reported in the lay press, by Dr. M. J. Scott, surgeon of Butte, Mont., former Omahan and graduate of Creighton College of Medicine, 1903, and for about five years assistant to Dr. J. E. Summers, Omaha surgeon, is of such surpassing interest as to seem to justify editorial comment. Briefly the statement is that a laboratory worker in New York, aided by the Butte surgeon, have succeeded in isolating the germ that causes cancer and have developed a serum which gives hopeful promises of being a cure for the disease.

Dr. Scott is reported to have said—"Just as certain as we are that the typhoid germ is the germ that causes typhoid fever, just as certain as we are that the diphtheria germ causes diphtheria, just so certain are we that the germ we have isolated causes cancer".

Experimental clinical laboratories with free serum and free service have been established in a number of cities where the serum will be put to the severest tests and it is thought that in about two months official public announcement may be made. Rhetoric fails one in an endeavor to express what it would mean to have this greatest of all scourges deprived of its terrors.

THE POOR BOY AND MEDICINE

Before the annual meeting of the Association of American Medical Colleges at Omaha last month Dr. Walter I. Niles, dean of Cornell University medical college is reported to have said some very astounding things derogatory to the poor boy who has the ambition to study medicine. One hesitates to pass judgment on what is reported to have been said for the report may err in not giving the speaker's statement in full. Let us grant that there is an element of truth in what he said; such "fool" statements make the leaders of the profession look ridiculous to the eyes of the laity and tend to discredit the profession before the public. Says the Lincoln Star:

Dr. Niles' specific complaint against the poor boy in medicine included these charges:

He is seldom a leader in his class due to impairment of health from overwork.

His scholastic attainments are diminished.

He has developed a rigidity of mental process that precludes imagination.

Of course, Dr. Niles was speaking of the group in general. Even at that his remarks stamp him as an intellectual snob, whose presence in American education is undesirable and dangerous. He is the apostle of a group of educators to be found in practically every school and college with scanty consideration for the men and women, who by circumstances of family fortune find it necessary to put themselves through college. They do not care to be bothered with the student who is forced to devote attention outside of the class room to the problem of earning a living. In some of the western universities, discouragements have been placed in the path of the young man who found it necessary to seek work outside in order to remain in college.

Some of the greatest physicians and surgeons in America have come from the ranks of the poor boys, who were forced to work their way through the university. The poverty of their early years broadened their sympathies and understanding of life, and if anything, increased their capacity to be of greater service to their fellow men. The human element has been removed from the medical profession altogether too much in the last few years. Dr. Niles' recommendations for qualifications for prospective medical students would only serve to exaggerate this tendency.

THE ANNUAL MEETING OF THE AMERICAN COLLEGE OF PHYSICIANS AND CONGRESS ON INTERNAL MEDICINE

St. Louis is an admirable Medical Convention city. Ample hospital facilities are afforded the visiting physician. Each morning of the meeting was given over to clinics and demonstrations at the various hospitals. The afternoons were spent in general assembly, and the reading of set papers. Individual meetings were held each day for the various medical specialties, including pediatrics, ear, nose and throat, nervous diseases, and dermatology. In order to avoid overcrowding in the hospitals every physician expecting to attend the Congress had the opportunity of selecting in advance the clinics or demonstrations he desired to attend. On his arrival in St. Louis he was presented with cards designating the morning he should spend at the different hospitals. The plan was carefully thought out and much confusion was avoided.

To detail the many distinguished talks and demonstrations in a convention of this kind is an impossibility. Suffice it to mention only a few.

Graham and Cole have been able to demonstrate the gall bladder by the x-ray. They do this by injecting intravenously a calcium salt of tetra-bromphenophthalein. X-ray pic-

tures are taken twelve to twenty-four hours after injection, and excellent gall bladder markings are shown. Details are given in the Journal of the American Medical Association of February 23, 1924. If this preliminary work proves to be of value, the diagnosis of definite gall bladder disease by the x-ray may be in the horizon.

A most uncanny exhibition of the remarkable forward strides of the radio was given. By the use of a special mechanism the entire audience of five hundred or more could distinctly hear the beat of the human heart.

Warthin of Ann Arbor has examined pathologically 1976 goiters. In all of his specimens there was present a true hypertrophy of the lymph nodes. He believes that Basedow's disease is a constitutional disease and that infants are born with this tendency, later on manifesting definite symptoms.

Pediatric work in St. Louis is well taken care of by Marriott, Hempleman, Jeans, Zahorsky, Brady, and many others. One is impressed with the numbers attending the various pediatric sessions and the increasing interest taken in the work. Marriott has done much to popularize the feeding of lactic acid milk. At present he is feeding whole lactic acid milk to underweight and undernourished babies, disregarding entirely the amount of calories, frequently exceeding 100 calories per pound in twenty-four hours. In order to make some of these infants gain in certain selected cases, he is giving intravenous glucose and then injecting insulin so as to assist in its metabolism.

In the medical treatment of selected cases of hydrocephalus he advocates the use of diuretin.

One is always pleased to have his own views expressed by others, and the writer feels better grounded in his own teaching when he hears Dr. Hempelman make the remark that he believes there is no such thing as infantile colic.

The American College of Physicians stands for the best ideals of the medical profession. Its work does not overlap that of any other organization, and is in harmony with all medical groups of high standing.

In attending a convention of this kind a man gets away from the routine, sometimes sordid, of our daily work. He becomes inspired anew with the realization of our opportunities for help and service.

—Floyd Clarke.

FUNGIOUS DISEASES OF MAN IN NEBRASKA

Fungous diseases known as sporotrichosis, blastomycosis, and actinomycosis are rather common in the middle west.

Dr. M. G. Wohl, Omaha, (Journal A. M. A., Aug. 25, 1923,) has reported eleven cases and collected other cases that occurred in Nebraska, making a total of twenty-eight cases. The reason for their apparent rarity is the failure to recognize them, since clinically they resemble skin tuberculosis, syphilis or epithelioma. The diagnosis can be easily made by the examination of the discharge from the lesions, with the addition of 20% of sodium hydroxide. The disease originates from natural moulds as they are easily grown on moist paper, cotton, boards, etc. Injury of the person offers an opportunity for direct inoculation (sporotrichosis and blastomycosis).

In actinomycosis the infection is carried to man from barley-beards, hard portion of grain, or grasses, as the result of the habit of using these as tooth-picks. The early recognition of the nature of the disease is important, since if allowed to go on (blastomycosis and actinomycosis), they tend to become systemic and obstinate to treatment. In the experience of the writer, surgical intervention, especially curettage, has aggravated the lesions, while if recognized early, they readily yield to potassium iodide internally, compound solution of iodine, and copper sulphate solutions as well as the Roentgen ray locally.

THE FIRST PRESIDENT OF THE STATE BOARD OF HEALTH — DR. JAMES V. BEGHTOL

The Legislature of 1889-90 passed an act for the establishment of a State Board of Health. This was brought about by the leading members of the State Medical Society, the immediate predecessor of our present organization. The board, as established by this act, was simply a licensing board and had no power over sanitation and other matters normally belonging to the jurisdiction of a board of health. Previous to the enactment of this law a person desiring to practice in the state was expected to register his diploma or other supposedly sufficient paper with the county clerk of the county in which he expected to practice. This loose provision brought to Nebraska many without right or knowledge to practice. The work of the newly created board is thought to have driv-

en at least one hundred illegal practitioners from the state during the first year.

The members of the first board were Dr. James V. Beghtol, (then of Friend, now, Hastings); Dr. F. D. Haldeman, (then of



DR. J. V. BEGHTOL

Ord, now Berkeley, Calif.); Dr. E. T. Allen, (Omaha); Dr. C. F. Stewart, (Auburn). The later history of Drs. Allen and Stewart is unknown to the writer. Dr. Beghtol was elected president and Dr. Haldeman, secretary.

Dr. J. V. Beghtol, was born at Industry, McDonough Co., Ill., in 1851, and attended the common schools of the town. At 18 he came to Shenandoah Iowa, and taught in the public schools of Page and Fremont counties five years. He then studied medicine and was graduated from Keokuk Medical College in 1877. He took a post graduate course in New York in 1903. He engaged in practice in Blanchard, Iowa, 7 years, was located at Friend, Nebr., 18 years. In 1902 he was appointed superintendent of the State Industrial School at Kearney, but after one year of service he resigned and located in Hastings, his present home.

Dr. Beghtol was a member of the State Board of Health, in all, seven years, having a short and a long term and retired by his own volition at the end of the second term.

Dr. Beghtol and his associates did a vast amount of pioneer work, clearing the state pretty well of quacks and laid the foundation for future work and better legislation.

EDITORIAL PARAGRAPHS

Why not a Nebraska State Doctors' Wives Club to meet annually at the same time and place as the Nebraska State Medical Association?

The Dearborn Independent, in two well written articles published March 1st and March 8th, pays its respects to "The Humbug of Gland Therapy Revealed as a Peril". This publication stands for rational medicine as a number of articles published during the past two years abundantly testify.

Four articles from the January Nebraska State Medical Journal were abstracted in the Journal A. M. A. for Feb. 16. They are "Treatment of Whooping Cough", (Henske); "Value of Cardiograph in Arrhythmias", (A. L. Smith); "Sodium Iodide Intravenously in Neuritis", (Stark); "Diabetes with a Peculiar Complication", (Barr and Allerton). The Nebraska State Medical Journal appreciates the recognition accorded to the profession and to the Journal.

ANNUAL MEETING, ASSOCIATION OF AMERICAN MEDICAL COLLEGES

The Thirty-Fourth Annual Meeting of the Association of American Medical Colleges was held in Omaha, February 28, 29 and March 1, under the presidency of Dean Irving S. Cutter of the Nebraska University, College of Medicine. Meetings were held in Conkling Hall on the Campus of the University of Nebraska College of Medicine. The University of Nebraska College of Medicine and Creighton University Medical School, both members of the Association, acted as hosts to visiting delegates. The meeting was the largest in point of attendance, 184 delegates, number of schools represented and in constructive work, of any of the sessions of the Association. Boston was chosen as the meeting place for the session of 1925.

Officers elected were: President—Dr. Ray Lyman Wilbur, President of Leland Stanford University, San Francisco, Calif.; Vice-president—Dr. Hugh A. Cabot, University of Michigan, Ann Arbor; Secy.—Treas.—Dr. Fred C. Zapffe, Chicago.

Executive Committee: Dr. David L. Edsall, Harvard University, Boston, Mass.; Dr. G. Canby Robinson, Vanderbilt University; Dr. Walter L. Niles, Dean Cornell Univ. Medical College.

Among the well-known educators present were the following: Dr. C. W. Martin, Dean, McGill University, Montreal; Dr. E. P. Lyon, Dean, Univ. of Minnesota, Minneapolis; Dr. Louis D. Moorhead, Dean, Loyola University Medical School, Chicago; Dr. W. H. Moursund, Dean, Baylor University, Dallas, Tex.; Dr. E. W. Montgomery, University of Manitoba, Winnipeg; Dr. B. D. Myers, University of Indiana; Dr. Chas. P. Emerson, Dean, University of Indiana; Dr. Adam M. Miller, Dean, Long Island College Hospital, Brooklyn, N. Y.; Dr. Chas. N. Meader, Dean,

Univ. of Colorado Medical School; Dr. Guy L. Noyes, Dean, Univ. of Missouri, Columbia; Dr. Walter L. Niles, Dean, Cornell Univ., New York City; Dr. F. W. O'Conner, representing Rockefeller Foundation; Dr. Thos. Ordway, Dean, Albany Medical College, N. Y.; Dr. Ross V. Patterson, Dean, Jefferson Medical College, Phila.; Dr. O. H. Perry Pepper, University of Pennsylvania; Dr. Wm. Pepper, Dean, University of Pennsylvania; Dr. W. A. Pearson, Hahnemann Medical College, Philadelphia; Dr. Henry Page, Dean, University of Cincinnati; Dr. Stuart Roberts, Emory University, Atlanta; Dr. J. M. H. Rowland, Dean, University of Maryland; Dr. G. Canby Robinson, Johns Hopkins and Dean Vanderbilt Universities; Dr. Stephen Rushmore, Dean, Tufts Medical School; Dr. L. S. Schmitt, University of California; Dr. J. Parson Schaeffer, Jefferson Medical College, Phila.; Dr. Martha Tracey, Dean, Woman's Medical College of Pennsylvania; Dr. Frederick T. VanBeuren, Columbia University, New York; Dr. Carl J. Wiggers, Western Reserve University, Cleveland, Ohio; Dr. H. G. Weiskotten, Dean, Syracuse University College of Medicine, Syracuse, N. Y.; Dr. S. P. Brooks, President, Baylor University, Dallas, Texas; Dr. Alexander S. Begg, Dean, Boston University School of Medicine; Dr. Paul Bartsch, Howard University, Washington, D. C.; Dr. C. C. Bass, Dean, Tulane Medical School, New Orleans, La.; Dr. C. R. Bardeen, Dean, University of Wisconsin Medical School, Madison; Dr. W. C. Borden, Dean, George Washington University, Washington, D. C.; Dr. Walter S. Bierring, Des Moines, representing Natl. Board of Medical Examiners; Dr. Geo. E. Coghill, University of Kansas Medical School; Dr. N. P. Colwell, representing Council on Medical Education of A. M. A., Chicago; Dr. E. F. McCampbell, Dean, University of Ohio College of Medicine, Columbus; Dr. Hugh Cabot, Dean, University of Michigan, Ann Arbor; Dr. Manford Call, Dean, Medical College of Virginia, Richmond; Dr. Wm. D. Cutter, Dean, New York Post Graduate Medical School, New York City; Dr. Samuel P. Capen, Chancellor, University of Buffalo; Dr. Wm. Darrach, Dean, Columbia University, New York City; Dr. Ernest E. Dickson, Stanford University Medical School, San Francisco, Calif.; Dr. Wm. J. Elser, Cornell Medical School, New York City; Dr. Chas. F. Martin, McGill University, Montreal; Dr. David L. Edsall, Dean, Harvard Medical School, Boston, Mass.; Dr. E. C. Guthrie, University of Pittsburgh, Pa.; Dr. Stuart Graves, Dean, University of Louisville, Ky.; Dr. Theodore Hough, Dean, University of Virginia Medical School, Charlottesville; Dr. C. A. Hamann, Dean, Western Reserve Medical School, Cleveland; Dr. R. R. Huggins, Dean, University of Pittsburgh Medical School; Dr. Don R. Joseph, Associate Dean, St. Louis School of Medicine, St. Louis, Mo.; Dr. C. Sumner Jones, Dean, Univ. of Buffalo, School of Medicine; Dr. Abram T. Kerr, Cornell University, Ithaca; Dr. David Kinley, President, University of Illinois, Urbana; Dr. Wm. Keiller, Dean, University of Texas, Galveston; Dr. George M. Kober, Dean, Georgetown Medical School, Washington, D. C.; Dr. Ray Lyman Wilbur, President, Leland Stanford University, Palo Alto, Calif.; Chancellor Samuel Avery, University of Nebraska, Lincoln; President C. S. Trotter, University of West Virginia, Morgantown; Dr. H. E. French, Dean, Univ. of North Dakota, Medical School, Grand Forks, North Dakota; Dr. Newton Evans, Loma Linda Medi-

cal School, Los Angeles, Calif.; Dr. Everett S. Elwood, Chicago, Natl. Board of Medical Examiners; Dr. J. C. Simpson, McGill University, Montreal; Dr. H. von W. Schulte, Dean, Creighton University Medical School, Omaha.

The following program was carried out: Thursday, February 28—"An Experiment in Interdepartmental Correlation", Don R. Joseph, Vice Dean St. Louis University School of Medicine.

"Experiences with Medical Clinics to the First Year Classes", O. H. Perry Pepper, Assistant Professor of Medicine University of Pennsylvania School of Medicine.

"Teaching of Pharmacology", Walter L. Bierring, Examiner in Pharmacology National Board of Medical Examiners.

"The Poor Boy in Medicine", Walter L. Niles, Dean Cornell University Medical College.

Address of President: "Basic Principles of Clinical Teaching", Irving S. Cutter, Dean University of Nebraska College of Medicine.

"A Provision for Increase in Medical School Enrollment Without Increase in Physical Equipment", Burton D. Myers, Assistant Dean Indiana University School of Medicine.

"Again, the Fifth or Intern Year; a Retrospect", L. S. Schmitt, Associate Dean, University of California Medical School.

"The Determination of Content of Professional and Pre-Professional Training", Samuel P. Capen, Chancellor University of Buffalo.

"Report of Committee on Education and Pedagogics", Ray Lyman Wilbur, Chairman.

Friday, February 29—Practical Demonstrations in Medical Teaching.

8:30—9:30 Anatomy and Pathology. University Nebraska.

9:30—10:30 Physiology and Pharmacology. University of Nebraska.

11:00—12:00 Anatomy. Creighton Medical College. Chemistry. University of Nebraska.

Demonstrations in Teaching of Clinical Subjects.

"The Intern Problem", Nathaniel W. Faxon, Chairman Intern Committee American Hospital Association.

"The New Medical Curriculum", Stuart Graves, Dean University of Louisville School of Medicine.

"Keeping the House in Order", H. G. Weiskotten, Dean Syracuse University College of Medicine.

"The Case of the Postgraduate Medical School", William Dick Cutter, Dean New York Postgraduate Medical School.

ANNOUNCEMENT TO DOCTORS' WIVES

Mrs. G. W. Dishong, president of the Doctors' Wives Club, wishes to announce to the wives of the outstate doctors that entertainment will be provided for them during their stay in Omaha when the annual meeting of the Association is held May 13-15. Committee members from the University Women's Faculty Club and Creighton University will cooperate with the afore-mentioned society, and a desk will be provided at the Hotel Fontenelle where some member of these various organizations will be on hand to greet the wives of the visiting doctors.

NEBRASKA STATE RADIOLOGICAL SOCIETY

The Nebraska State Radiological Society will hold a one-day session on May 12, 1924, at the Hotel Fontenelle, just preceding the annual convention of the State Association.

WESTERN ELECTROTHERAPEUTIC ASSOCIATION

The sixth annual meeting of the above association will be held in Little Theatre, Kansas City, Mo., April 17-18, under the presidency of Dr. H. H. Bowling, Rochester, Minn. Dr. Wm. L. Clark, Philadelphia surgeon, will be guest of honor.

THE SOCIETIES

At the meeting of the Lancaster County Medical Society, February 16, 1924, Dr. Daisy Hanson reported a case of deficiency of the activity of the internal secreting glands. She was able to study her case since May, 1922. The patient had complained especially of being weak, extreme loss of weight, numerous attacks of hives and varied blood-pressure. General physical examination showed that the heart, sinuses, teeth, etc., were normal. By hypodermic injection of extracts of the mixed ductless glands, the patient rapidly improved and remained so as long as kept upon gland therapy. Dr. George Covey, in discussion, spoke of the activity of the various glands and their effect upon certain conditions of the body. Dr. Stanley Clements suggested attempting to find out if possible, which gland was deficient and administering the extract of it alone.

Dr. I. J. Owen reported a case of leprosy that he had been able to observe for approximately six months. He called attention to the difficulty of finding the lepra-bacillus in nervous types of leprosy. Also, that a 4 plus Wassermann reaction was practically always present. The principal points of diagnosis being the characteristic microscopic tissue, the anesthesia and definite formation of superficial structures. Dr. Owen also reported a case of syphilitic gumma of the lip, in which cancer tissue was present. He was able to definitely confirm his diagnosis after syphilitic treatment had been given and microscopic examination of the cancer tissue had been made. Dr. P. H. Bartholomew, in discussion called attention to the possibility of syphilitic gumma being a fertile place for cancer tissue to implant. Dr. T. F. McCarthy urged that no patient should be operated upon for cancer until all possibility of syphilitic gumma could be removed.

Dr. Roscoe L. Smith presented an x-ray study of the tubercular chest with plates to demonstrate his contention that it had three distinct stages. First, that of granular congestion or enlargement which is especially found in children. This stage especially affects the peri-bronchial and mediastinal lymph nodes. The second stage involves the tissue directly surrounding these nodes. These areas may become limited by fibrous tissue. The third stage is more commonly found in adults, showing large destructions of lung tissue which may be either active or inactive.

Dr. Clarence Emerson in discussion urged a general study of the physical development in diagnosing early tuberculosis. Dr. D. C. Hilton spoke of the extreme necessity of careful elimination of other diseases. Dr. J. J. Hompes called attention to

the relation of changes of throat and chest conditions. Dr. Covey spoke of the drainage of the lymphatics in the various portions of the lungs. Dr. S. C. Clements spoke of the necessity of examining under various conditions. In closing the discussion, Dr. Roscoe Smith called attention to the proper use of the x-ray as compared to inspection.

Dr. George W. Covey reported a case of a married woman, aged 40, for diagnostic study. The principal features were dizziness accompanied with unconsciousness at various times for approximately the last ten years. Blood pressure low, cyanosis of lips and fingers; enlargement of liver and spleen. Blood picture normal, except an occasional nucleated red cell. Stomach content and Wassermann reaction negative. A complete study of the case will be published in a subsequent issue of the Journal.

At the meeting of the Society Saturday evening, March 1, 1924, Dr. M. J. Breuer presented a report of the results he had obtained in his study of tuberculosis. He had taken a number of patients, given them moderate exercise, and deep-breathing instead of positive rest. His report compared the results very favorably with those obtained by complete rest in a mild type of cases. In the more active type the results were not so favorable.

Dr. F. L. Rogers reported the autopsy findings of a baby one hour old that had died as a result of cardiac insufficiency. The left auricle was exceedingly large, and of very thin structure, showing only membranous development.

Dr. C. H. Bastron reported a case of pyelitis, he had been able to study for some months. The patient had improved both by local and systemic treatment. He had been able to watch the results and considered both forms of treatment very appropriate.

Dr. H. H. Webb gave the results of his study of Hay Fever treatment by Pollen inoculation. He had been able to follow many of his cases for a period of some years. He was able to compare the results of the different modes of injection. He urged careful observation of the patient both before and after treatment. His results were very gratifying. Dr. G. H. Walker in discussion urged the freeing of these cases from general systemic toxemias. Especially with reference to the alimentary tract. Dr. W. O. Colburn urged developing the vaccines into definite groups and thereby making the treatment more simple and less annoying to the patient. Dr. B. F. Bailey who has used hay fever as an excuse for a vacation for 54 years, contended that if the general health was kept to normal at all times the possibility of contracting hay fever would be greatly lessened. Dr. Webb, in closing, reported cases showing a marked hereditary tendency in contracting the affection. He urged that as much care as possible be used to protect the children of parents suffering from hay fever.

—D. D. Sanderson, Sec.

The Madison County Medical Society held a meeting at the Norfolk State hospital, February 26. A seven o'clock dinner was served and the program, which was an unusually interesting one, centered around a neuro-psychiatric clinic. Owing to road conditions the attendance was not as large as had been expected.

The Butler County Medical Society, held its annual meeting at David City, Feb. 27. Dr. J. H. Downing of Rising City was elected president; Dr.

C. E. Beede, David City, secretary-treasurer, and Dr. H. E. Burdick, David City, delegate.

The February meeting of the Scotts Bluff County Medical Society was held at Scottsbluff, Lincoln Hotel, Thursday, Feb. 14, 8:00 P. M., with a good attendance, and the following program rendered.

Winckel's Disease, or Epidemic Hemoglobinuria, with a Case Report, Dr. F. M. Collins, Mitchell, Nebr. Hospital Records, Miss Lydia H. Keller, R. N., Supt., West, Nebraska Methodist Hospital.

Aortic Aneurism, Syphilitic with Case Report, Dr. A. L. Cooper, Morrill.

—A. L. Cooper, Sec.

Twenty members of the Adams County Medical Society, with their wives, were delightfully entertained at their semi-monthly meeting in the Clarke Hotel by Professor and Mrs. Richard C. Reager of Hastings College. Their first number, a play staged in an asylum and entitled, "No One Knows," was given by request. They responded to three encores with humorous readings on doctors.

The Ninth Councilor District Meeting, Nebraska State Medical Association, was held at Elk's Home, Grand Island, Nebr., March 11, 1924, 2:00 p. m.

Program: "Resume of Our Present Knowledge of Surgery of the Upper Abdomen", C. A. Roeder, M. D., Omaha; "Early Diagnosis of Pulmonary Tuberculosis", W. E. Rose, M. D., Kearney; "The Evolution of Hospital Standards", J. Stanley Welch, M. D., Lincoln; "Public Health Service", Frank D. Ryder, M. D., Grand Island; Address of the Councilor, R. D. Bryson, M. D., Callaway.

A banquet was given at St. Francis Hospital at 7:00 p. m., followed by, "The New Annex", Rev. Constant Klein, O. M. C., Grand Island; Meeting of Staff of St. Francis Hospital; Presentation and Discussion of Cases. Fifty doctors attended.

The Omaha-Douglas County Medical Society meeting of March 11, centered around a symposium on pain. The Diagnostic Value of Pain Produced by Lesions of:

The Eye, Jas. M. Patton; The Bones and Joints, R. D. Schrock; The Intra-Cranial Structures, J. J. Keegan; The Chest, W. N. Anderson; The Ear, Nose and Throat, H. B. Lemere; The Female Pelvis, Palmer Findley; The Urinary Tract, Edwin Davis; The Abdomen-Medical, Adolph Sachs; The Abdomen-Surgical, C. A. Roeder.

Each speaker was limited to seven minutes.

HUMAN INTEREST TALES

Dr. J. S. Winston has located at Lodge Pole.

Dr. O. S. O'Neill, formerly of Norfolk, has located at West Point.

Dr. E. H. Dwyer, Gordon, has gone to Philadelphia for postgraduate study.

Dr. Charles B. Huestis, formerly of Omaha, recently moved to Hayden, Ariz.

Dr. B. B. Davis spent a short vacation in and about Phoenix, Ariz., recently.

Dr. L. C. Bleick, Omaha, addressed the Cosmopolitan club at a recent weekly luncheon.

Dr. Frank A. Nelson, has moved from Tecumseh to Lincoln, where he will engage in practice.

A new women's ward, costing approximately \$90,000 is being built at the Norfolk State hospital.

The marriage of Dr. George L. Pinney, Hastings, to Miss Sarah E. Boone of Chicago, is announced.

The profession sympathizes with Dr. H. N. Morrow, Fremont, in the loss of his wife last month.

A new building is to be built at the Beatrice Institution for the Feeble-Minded at a cost of \$100,000.

Dr. E. I. Kushner, for a short time located at Papillion, has gone to southern California to practice.

The offices of four Hastings physicians were pillaged about the first of March in an endeavor to find narcotics.

Dr. Carrol D. Evans, Jr., Columbus, has been commissioned a captain in the medical officers' reserve corps.

Dr. Amy Robertson of Hastings has accepted a position on the medical staff of the State Hospital at Ingleside.

A five-story nurses' home, an addition to St. Joseph hospital, Omaha, housing 180 persons, was dedicated March 19.

Dr. Miles J. Breuer, Lincoln, attended clinics in St. Louis in February and also attended the Clinical Congress of Physicians.

Dr. J. W. Neville, Stromsberg, is about to locate at Utica. He is to be succeeded by Dr. A. J. Edstrom of Clyde, Kansas.

Dr. Walter Judd, recent graduate of the University College of Medicine and at present an interne, is to enter the foreign mission field.

Dr. G. F. Bartholemew, who has practiced medicine in Rushville, Merriman, and more recently at Whitney, has moved to Onaka, S. D.

Dr. G. O. Dunseth, Scottsbluff's physician for the past two years, has taken a contract practice in the lumber camps of northern Wisconsin.

Dr. D. D. King, York, has purchased the property of the York Clinic hospital and the business will be continued as the York Clinic and Hospital.

Dr. George F. Shidler of York is about to locate at Torrance, Calif., to practice surgery with Dr. Jesse Lancaster, former York practitioner.

Dr. and Mrs. Clyde Roeder, Omaha, made a trip to Sacramento to the bedside of the father, Dr. George Roeder, who has been alarmingly ill for some time.

Dr. Ernest G. Kieck, Shellsburg, Iowa, visited the parental home at Springfield, Nebr., recently. He has gone to Vienna to take a special course in internal medicine.

Dr. C. C. Paxton, late of Fruitland, Ida., has succeeded to the good will and belongings of Dr. F. W. Schaller, Palmer. Dr. Schaller has not decided on his future course.

Dr. F. W. Plehn, Scottsbluff, has been appointed councilor of the Twelfth District to succeed Dr. A. J. Mitchell who resigned to enter field as a medical missionary in China.

The friends of Dr. Ewing Brown, for many years a practitioner of Omaha, now of San Pedro, Calif., will be pained to learn that he buried his wife in Omaha in mid-March.

Dr. Nelson Mercer of London, Eng., a native Omahan, visited in Omaha recently. His father, Dr. Samuel Mercer, was chief surgeon of the Union Pacific for many years.

Dr. J. S. Welch, Lincoln, attended the three day session of the Congress on Medical Education and Hospitals, State Boards and Bureaus of Health, in Chicago, in early March.

Dr. J. A. Callahan, Snyder, was painfully injured in a railway crossing accident on the Lincoln Highway in the west end of Fremont, March 12. Presumably the car perished.

Dr. A. L. Barr, Nebraska City, spoke to the ward schools on "The Causes of Malnutrition", as a part of the child welfare survey being made under the auspices of the Woman's club, last month.

Dr. John Montgomery, travelling "specialist from St. Louis", was last month reported under arrest at Falls City and Beatrice and wanted at Blue Springs and Fairbury, for passing worthless checks.

Dr. J. N. Hall of Denver, will be the guest of the Lancaster County Medical Society Saturday evening, April 5, and will lecture upon "The Relationship between The Various Digestive Diseases."

It is reported that Dr. E. R. Hays, Falls City, received a prize of \$1,000 from the manufacturers of the Arm and Hammer Brand Soda for an article he had written on the value of bicarbonate of soda.

A farewell banquet was held at the Palace Hotel banquet room in North Platte on March 2, in honor of Dr. J. S. Simms of that city, who is leaving for Los Angeles, where he will practice medicine and surgery. The evening was spent in reminiscences and in an informal manner many complimentary farewell talks were given by those attending in behalf of Dr. Simms. He was also at this time presented with a beautiful leather bill folder as a memento of the friendship and respect which his colleagues hold for him. Dr. Simms departed for Los Angeles, March 3.

NECROLOGICAL

Dr. George H. Brash, Beatrice, Nebr., University of Michigan Medical School, Ann Arbor, 1892; for twenty-five years a well known leading practicing physician in Beatrice and Gage county, died February 28, of brain tumor, aged 53.

Dr. Brash came to Nebraska thirty years ago, first locating at Albion where he remained five years, then located at Beatrice. He was a member of the Nebraska State Board of Health by appointment of Governor Poynter. He was active in the civic affairs of the city and community in which he lived. He is survived by a widow and two daughters.

Dr. Charles C. Stivers, Beatrice, Nebr., College of Physicians and Surgeons, Keokuk, 1892, for some time a physician at Wilbur, later at Lincoln, and since last fall a practitioner at Beatrice, dropped dead in his office, February 26, aged 60.

Dr. J. C. Hammond, Omaha, Nebr., Creighton University College of Medicine, 1896, an eye, ear, nose and throat surgeon; prominent in Masonry, died in a hospital February 16, aged 63. Dr. E. D. Hammond, Salt Lake City, and Dr. S. W. Hammond, Rutland, Vt., were brothers of deceased.

Dr. V. M. Boal, Monrovia, Calif., College of Physicians and Surgeons, Keokuk, 1881; for forty years antedating July 1919, a beloved practicing physician at Auburn, Nebr., died February 2, aged 74.

"Doctor Boal never was known to the medical profession in the state like some men, for he was modest and unassuming, preferring the plaudits of his immediate associates and patrons rather than fame among the larger figures; and he certainly was worthy of all the affection and high esteem bestowed upon him by the laity and by his professional brethren who knew him best."

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CONTENTS

Gun Shot Wound of the Chest: Valvular Thoractomy, Karl Connell, M.D., F.A.C.S.	157	Three Cases of Osteomyelitis, A. C. Stokes, M. D., F. A. C. S.	182
Cleft Palate and Cleft Lip Cases, Wm. L. Shearer, A. B., M. D., D.D.S., F.A.C.S.	160	Some Cases of Corneal Disturbance, James M. Patton, M. D., F. A. C. S.	183
Frontal Sinus Suppuration—Tic Douloureux, H. B. Lemere, M. D., F. A. C. S.	161	The Appendico-Biliary Syndrome, Max Emmert, M. D., F. A. C. S.	184
The Value of Osteotomy in the Correction of Gross Deformity, H. Winnett Orr, M. D., F. A. C. S.	165	Cholelithiasis During the Symptomless Stage, A. J. Brown, M. D., F. A. C. S.	185
Carcinoma of Antrum—Sarcoma of the Middle Ear, Wm. F. Callfas, M. D., F. A. C. S., and D. T. Quigley, M. D., F.A.C.S.	167	Three Cases: Orbital Infection—Foreign Body in Bronchus—Actinomycosis, John B. Potts, M. D., F. A. C. S.	187
Orthopedic Cases, J. P. Lord, M. D., F. A. C. S.	168	EDITORIALS—	
Concussion of the Brain Associated with Carbon Monoxide Poisoning, J. S. Welch, M. D., F. A. C. S.	170	The Annual Meeting, May 13, 14, 15, Nebraska Section Meeting, Clinical Congress, A. C. S.	190
A Marked Case of Diplopia Relieved by Operation, J. M. Banister, A. B., M. D., F. A. C. S.	171	Rest in Tuberculosis	191
Demonstration of a Pelvic Case, Chester H. Waters, M. D., F. A. C. S.	172	Blood Pressure	192
Urate Soda and Cholesterin Nodules on the Tendons, A. F. Jonas, M. D., F. A. C. S.	173	Ethylene—The New Anaesthetic	193
Goiter, Delmer L. Davis, M. D., F. A. C. S.	174	The Complexity of the Hay Fever Problem	194
A Case of Tubal Pregnancy with Rupture of the Uterus, Henry A. Johnson, M. D., F. A. C. S.	176	Thyroidectomy: Further Modification in Technic	194
A Case of Kummel's Disease, J. E. M. Thomson, M. D., F. A. C. S.	178	Annual Session of the A. M. A., Chicago, June 9-13	195
Traction Fracture of the Lesser Trochanter, J. Frederick Langdon, M. D., F. A. C. S.	181	Editorial Paragraphs	195
		Program, Nebraska State Medical Association, Annual Meeting, May 13-15, Fontanelle Hotel	196
		Convention Announcements	196
		The Societies	197
		Human Interest Tales	199
		Necrological	199
		Book Reviews	200
		Books Received	200

GUN SHOT WOUND OF THE CHEST: VALVULAR THORACTOMY*

Karl Connell, M. D., F. A. C. S., Omaha, Nebr.

Of the group of gunshot wounds of the chest in the World War, much was wreckage. This patient, a victim of present day industrial warfare, presents one of the favorable end results of such wounds, a gunshot wound of the thorax, complicated by hemo-pneumo-thorax and retained infective foreign body.

This man is 23 years old. A year ago he was shot by a strike-breaker's bullet. The missile entered his left chest anteriorly, ranged downward and backward through the lung and lodged beneath the skin posteriorly, from whence it was removed. He was brought to the Presbyterian Hospital with the left lung in complete collapse, his heart displaced

to the right and his pleural cavity filled with blood and air. (Fig. 1 and Fig. 2). Although the heart was displaced to the right, there were no pressure symptoms demanding immediate relief. The first phase of surgical treatment of pulmonary wound was, therefore, entered upon, namely, watchful waiting.

These thoracic injuries require, not so much of surgical skill as surgical judgment. The spontaneous collapse of the lung from pneumo-thorax usually terminates the active bleeding. The stage of shock is tided over by quietude, morphine and heat.

The second phase of surgical treatment now presented, namely, removal of the bloody exudate and reexpansion of the lung. Again judicious waiting was the course pur-

*Given before the Nebraska Section, American College of Surgeons in Omaha, February 18-19.

sued. If we aspirate and endeavor to reexpand the lung within a few days following gunshot injury, we may start fresh hemorrhage and reopen a plugged traumatic bronchial fistula. Better to wait for repair and absorption of exudate, as long as the patient's condition will permit.



Figure 1. Hemo-pneumo-thorax from gunshot wound.

In this patient no symptoms arose demanding drainage until the tenth day. His temperature then became septic and the as-

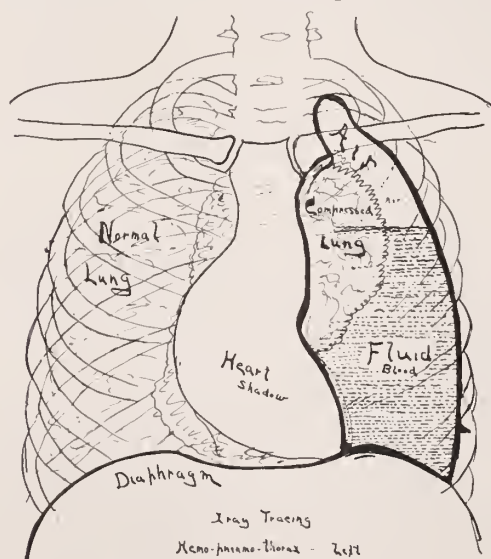


FIG. 2.
Interpretive tracing of figure 1.

pirated fluid from the hemothorax showed many pus cells. Attempt to remove the exu-

date completely by aspiration in these cases, is unavailing. The cannula plugs with clot and fibrin and sepsis is unrelieved. Nor does intubation of the chest by Dakin tube and cleansing by intermittent injection of Dakin's solution, followed by aspiration, work satisfactorily, yet by this means ground is gained. Any of these temporizing measures that will yield a partially reexpanded lung is preferable to wide open drainage. The operation of choice, in the absence of infection, is massive removal of the blood and exudate by intercostal thoracotomy with immediate closure of the wound. Not that such removal of detritus and suture settles the matter, for oftentimes secondary exudate must be tapped and even a residual empyema may gather, and demand drainage, yet, on the whole the lung is usually thus effectively re-expanded. To the contrary, open thoracotomy as usually practiced with insertion of open drainage tube, is lamentable in its final result. True, it rids the patient of the primary sepsis but such open drainage leaves the collapsed lung a mere fibrous ball plastered against the mediastinum. The usual sequelae of open drainage are—mixed infection, chronic sepsis, feeble reexpansion of the lung, multiple drainage and thoracoplastic operations and—if the patient survives, final healing with much deformity after a stormy year or two of fight for life.

In this patient for effective drainage, I performed open thoracotomy with rib resection, but immediately converted the drainage tract into a valve that functioned outward. This operation, I devised as a result of my gas mask engineering experience in the World War. It has been employed on all the empyemata, some seventeen in number, that have come under my care since 1919, and on one similar gunshot wound. It has uniformly rapidly obliterated the pleural cavity down to a residual sinus of an ounce or two capacity within two weeks. This operation of valvular thoracotomy consists briefly in raising upward a semi-circular skin flap, beginning in the tenth interspace in the mid scapular line, then resecting the ninth rib, opening the thorax without loss of exudate, inserting so as to project into the pleural cavity a strip of celluloid cut from x-ray film, 1½ inches wide by 6 inches long. The skin flap is now sutured back in place, except at the dependent exit of the flat celluloid strip. This yields valvular drainage more efficiently than by any method I have em-

ployed. The soft parts themselves form an effective valve, opening easily and widely to expiratory pressure and competently closing on the negative or inspiratory phase of respiration. The excellent drainage and negative pull on the lung thus achieved is exaggerated by hourly use of blow bottle, blowing against a pressure of 2 ft. of water. The empyema cavity is cleansed daily by flushing with Dakin's solution of sodium hypochlorite. The celluloid leaf is not disturbed until finally removed on the twelfth day.

In this patient by the third day, the lung was practically re-expanded, meeting the surgeon's finger, exploring the valve opening. By the eighth day it was generally adherent and the residual cavity held ten ounces. By the fourteenth day the cavity that had involved the entire left chest, now held under distention six ounces of Dakin's solution. Figure 3.

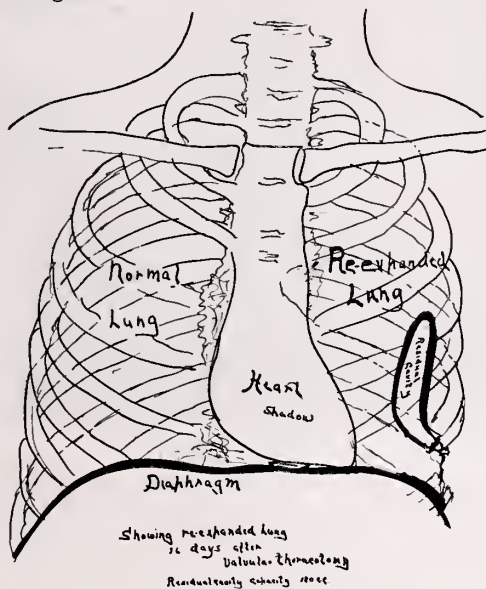


FIG. 3.
Tracing from x-ray 16 days after valvular thoracotomy, showing replacement of the heart, reexpansion of the left lung, contracture of the left chest, and the extent of the residual sinus.

This small cavity remained purulent, the exudate did not become mucilagenous nor did the cavity heal entirely as it should have done by the end of the third week. Foreign body was, therefore, suspected being often the cause of such delay in gunshot wound. By the fourth week septic temperature began again, a secondary pleural abscess brewed high in the interscapular region and during the fifth week this pleural abscess broke into the old sinus, discharging a half litre of pus which contained a fragment of woolen shirt about one centimeter in diameter. Figure 4.

It was an observation of the war that low velocity missiles commonly carried clothing and other foreign bodies deep into the tissues. I well remember a French soldier in the winter of 1914, brought to the Whitney Hospital in the Aisne Sector from the fight

near Soisson. He presented on debridement at the bottom of a tract four inches deep through his left shoulder joint, a lead shrapnel ball, capped by woolen cloth and with fully ten layers of clothing distributed along the tract, blue overcoat, felt wadding, red and gray sweaters and various layers of flannel undershirts. This carrying in of

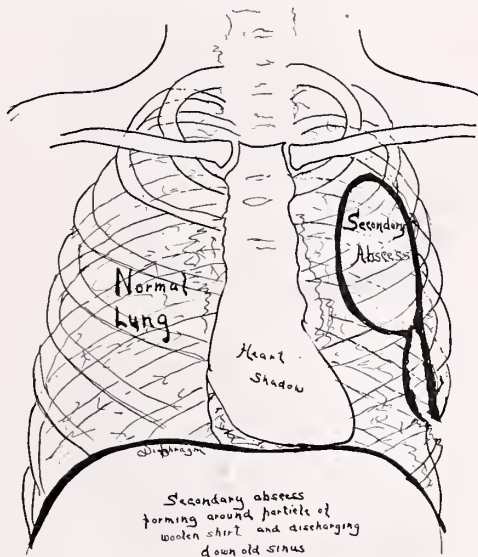


FIG. 4.
Tracing from x-ray showing secondary pleural abscess developing on the thirtieth day around a fragment of woolen shirt.

clothing was the most fruitful cause of gas gangrene in the shrapnel wound of those days.

To return to our patient, he now presented a condition of secondary pleural abscess draining through

Cross Section Thorax

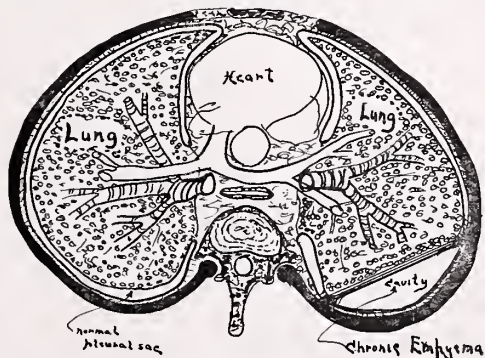


FIG. 5.
Schematic cross section of the thorax, to illustrate factors in the chronicity of empyema, showing usual location of the residual cavity—when the healing of pleural abscess comes to a standstill. This cavity usually leads from a poorly draining fistula up toward the apex of the lung. It is residual after the mediastinum has shifted, the lung has expanded and the chest has contracted on the side of the lesion in response to differential pressure and cicatricial pull. Finally across the sharpest bend of the ribs the pleura has become so densely adherent and thickened and drawn so tightly, as a drum head, that no force of pressure or suction avails to further approximate visceral surface to chest wall. The contracture of granulations in the recedent angles of the cavity is a force powerful enough to pull out this tense membrane; or the membrane may slit to release the soft lung tissue beneath. Healthy cicatrizing granulations in the recedent angles are favored by good drainage and cleansing from mixed infection by the Dakin-Carrel method.

a long tract, Figure 4. To secure better drainage, the 7th and 8th ribs were resected and Carrell-Dakin treatment instituted. Usually when these small cavities are properly drained and cleansed, the powerful pull of cicatrix in the recedent angles of the pleura will pull the lung out to the chest wall and obliterate these small cavities. In this case the sterilization technic failed to obliterate the cavity.

A minor decortication of the lung was, therefore,

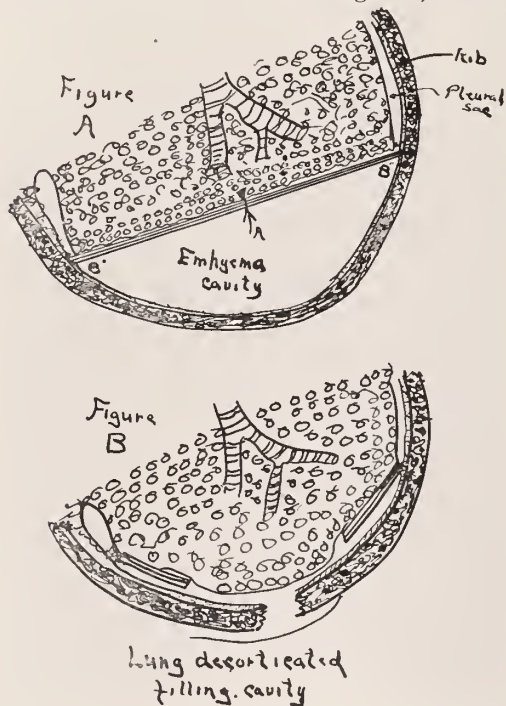


FIG. 6.

THE OBLITERATION OF CHRONIC EMPYEMA BY DECORTICATION

The thickened pleura B-B' stretches as a drum head, usually an eighth of an inch thick across the sharpest bend of the ribs. The lung is soft and elastic beneath and covered by its own membrane. The drum head may be slit as at a", Figure A, and peeled from the lung by finger dissection back to its attachment at B-B". The lung from beneath then bulges through like a compressed sponge, Fig. B. Differential pressure by wound closure or by valvular drainage favoring, and the cavity having been reasonably cleansed by Dakin irrigation, the lung soon completely fills and obliterates the former abscess cavity.

done through a wound involving resection of the 3d and 4th ribs in the interscapular region. A discussion of the rationale of decortication appears in the legend under figures 5 and 6.

In this patient following such decortication and closure by loose suture without drainage, the operative field oozed for three days between the sutures, when it healed completely. The end result, shown in Figure 7, an x-ray taken recently, one year after the injury, shows a left chest with bony irregularity at the site of the rib resections, but the lung itself is fully expanded and of normal texture. The pa-



Figure 7—End result.

tient has lost 3-4 of an inch of expansion on left side of chest, yet his general health is unimpaired and the end result is satisfactory.

CLEFT PALATE AND CLEFT LIP CASES*

Wm. L. Shearer, A. B., M. D., D. S., F. A. C. S., Omaha, Nebraska.

When a child is born with complete cleft of the hard and soft palate, involving the anterior ridge, the important factor to be determined, is the time best to operate.

At birth, the bones contain about one-half organic matter, and as a result of this fact, are quite easily molded into position. There is an impression quite prevalent among professional men, generally, that when the Brophy operation for cleft of the hard palate, involving the anterior ridge, is made, silver wires and lead plates are used to force the parts into apposition. This is not true. The parts are forced into apposition by careful manipulation with the thumbs and fingers,

and the silver wires and lead plates are only used to immobilize the parts after compact bone has been placed in apposition with compact bone.

When this principle and truth is understood, the question so often raised by many, that there will follow a pressure necrosis, is entirely discredited. Since I have made over a thousand bone operations, if pressure necrosis followed the Brophy operation, when properly done, certainly it would have been my misfortune to have had such a complication. This statement is made, not with the thought of presenting a large series of cases, but only in appreciation of the principles covering cleft of the bones, as laid down by

*Given before the Nebraska Section, American College of Surgeons in Omaha, February 18-19.

Brophy, and the steps of the operation carried out in detail after that great master.



Case II, Plate 1.

We have found, from long experience, that the time best to operate upon the bones, is from a few days after birth to not later than six weeks, in the majority of cases, for the reasons just stated above.

Case 1. Babe born with complete single cleft of the anterior ridge of the palate, accompanied with complete cleft of the lip. This type requires a three stage operation. The first step, placing of the bones into proper position and immobilizing them. The lip and nose operation may be done at any subsequent time, after one is certain of a bone foundation. All plastic surgery requires for its greatest success, some sort of a foundation. This one principle was learned by the majority during the late world war. Plastic surgeons generally found that where the bony framework of the face was destroyed, it was necessary to employ the highest type of well trained dental men, in mechanics, before normality could, at least in a measure, be accomplished by different forms of plastic operations.

The cleft of the palate is the failure of union, during embryonal development, and not the absence of parts, in the majority of cases.

Case 2. Boy about five years of age, with the nose over one-half inch off center, at the side of the long half of the maxillary bone. This case had been formerly operated upon without success, due to the fact that the proper bone foundation was not made before undertaking the plastic operation. At this late age a green-stick fracture must be made.

Slow movements of the bones by any sort of orthodontic measures, are usually impracticable. For this child, the first operation made was a Shearer modification of the Brophy green-stick fracture operation, drawings of which operation accompany this paper. As illustrated in the drawing, an incision is made in the mucoperiosteum just far enough upward from the cemento-enamel junction of the teeth to enable one to return the muco-periosteal flap into position and suture with horse hair. When the mucoperiosteal flap is laid back, one can see just where the fracture is made and in many instances avoid loss of certain teeth. Moreover, all jagged edges of bone, at the point of fracture, are visualized and trimmed off smoothly, so that there will be no subsequent irritation of the mucous membrane.

Case 3. This young fellow was brought to me about four years ago, having had the pre-maxillary bone excised. When the pre-maxillary bone is excised, a greater deformity is produced than is presented at birth. The excision of the pre-maxillary bone is a most unfortunate thing to happen to a child for the reason that the pre-maxillary bone contains the temporary, as well as the permanent tooth follicles, and with this excision, the child will be forever missing the temporary, as well as the permanent teeth. It is a condition which requires many operations to correct, and the ultimate result is unsatisfactory, as you can see plainly from this case presented. To correct and obtain even as good a result as has been obtained for this boy, required seven operations done under general anesthesia, and three under local.

He now has a bridge extending from cuspid to cuspid, which acts for him as a bone foundation, and



Case II, Plate 2.

is responsible for the general contour of the upper lip. In order to obtain what foundation this young



Case II, Plate 3.

man has, the end of the vomer was carried down between the halves of the maxillary bone, and covered by muco-periosteal flaps.

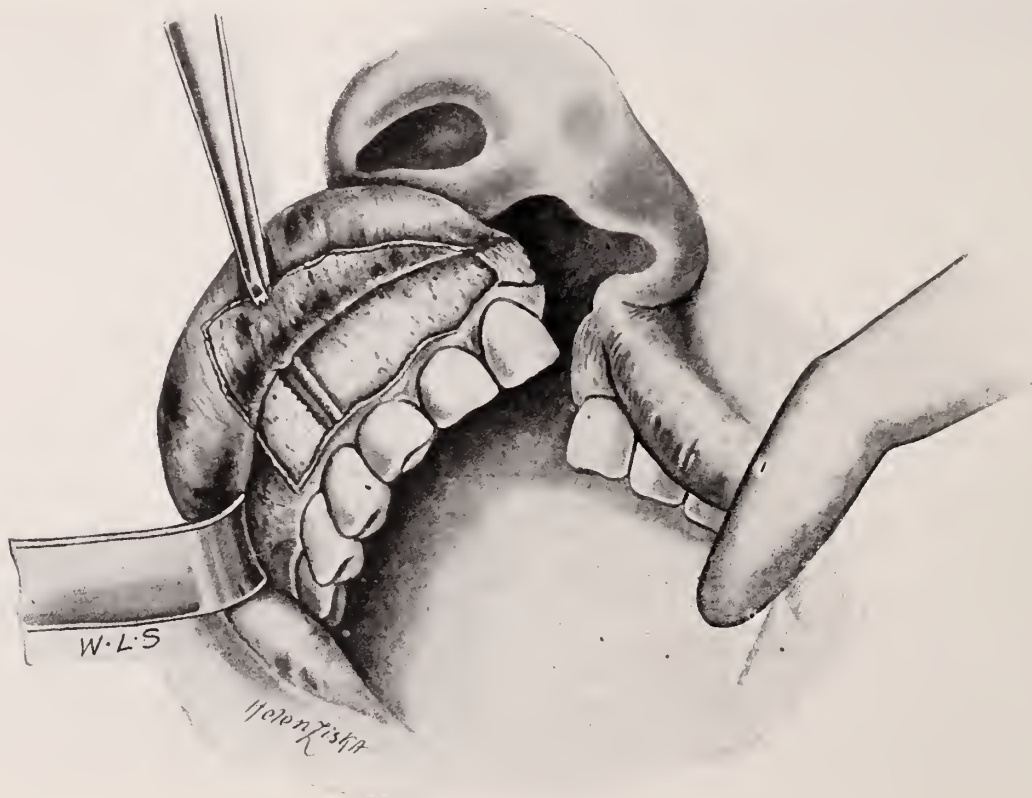
Case 4. Young lady seventeen years of age, presented with a most extensive cleft of the soft palate, extending into the hard palate, but not involving the anterior ridge. The cleft measured, at the posterior wall of the horizontal plates of the palate bones, a distance of one and one-half inches. I was rather reluctant to undertake this operation for the reason that I did not know that I could obtain a result for her. She, being willing to take a chance, we undertook to do something for her, and I am happy to say, that quite a good result has been accomplished. She is now able to speak and pronounce words which she could not formerly pronounce. Moreover, as you hear her speak, you can understand every word she says, and as a result of this operation she is able to earn her own livelihood. A great many children who are allowed to go on to adult life without the correction of the soft palate, gradually become deaf and this is accounted for by lack of function.

By traction in the act of swallowing and speaking, the tensor-palati muscles, controlled by the tensor-palati nerve, dilate the pharyngeal orifice of the eustachian tubes, and as stated above, without this function, deafness often follows.

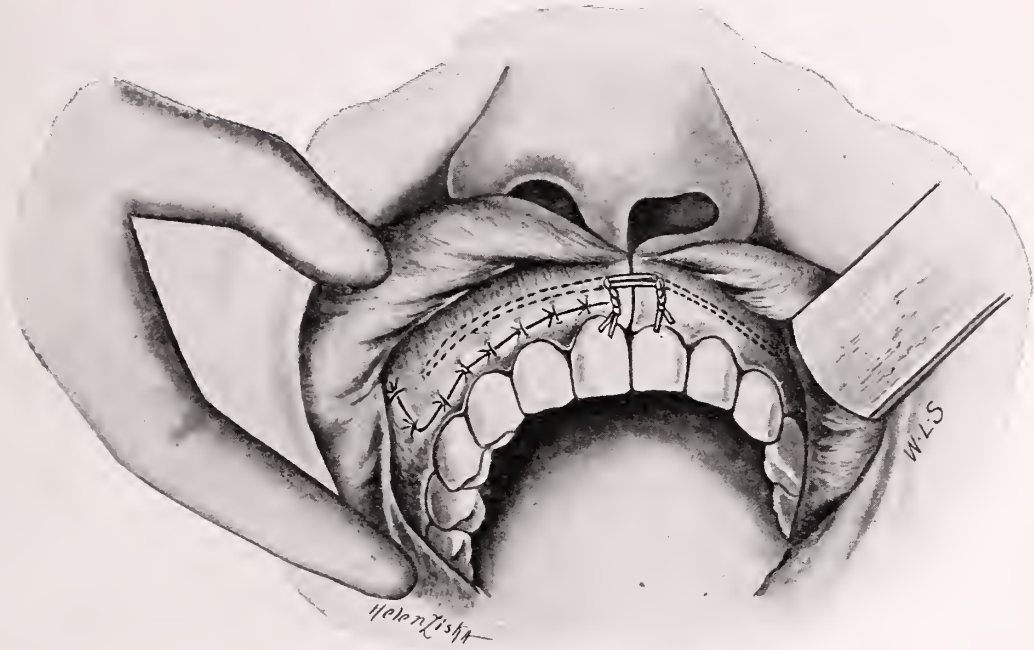
With the exercising of all care, there was some destruction of the tensor-palati nerve on one side, which permits the palate to be drawn over to the other side. Therefore, this is not a perfect palate, yet with the function which has been given her she speaks quite well.

CONCLUSIONS

1. Children born with cleft of the palate



Case II, Plate 4.



Case II, Plate 5.

bones, either single or double, should have early surgical interference. The time best to operate, from the age of two weeks to six weeks. The object to be attained in the treatment of congenital cleft palate, is to establish normality. The success of the surgeon will be measured by this standard.

tour is restored. Result, a natural baby face. Unless the distance from tuberosity to tuberosity of the maxillary bones is reduced to



Case IV, Plate 1.

2. Children with cleft of the palate bones always have a broad face. When the bone surgery is properly done, normality of con-



Case IV, Plate 2.

normal when operation is made, a flexible, resilient palate, so essential to speech, will not be accomplished. Result when this step of the bone operation is overlooked, is short palate, tense palate, defective speech.

3. The tensor-palati muscles, by traction in the act of swallowing and speaking, dilate the pharyngeal orifice of the eustachian tubes. Without a fairly normal, functional palate, deafness often follows. If the tensor-palati nerves are severed when operating, a proper, functional palate never can be made.

4. Surgical correction of cleft lip may be made at any time after bone foundation is complete. Surgical correction of cleft of the soft palate, should be done, usually from the age of fourteen to eighteen months. Earlier than this, the soft palate does not stand surgery well.

FRONTAL SINUS SUPPURATION — TIC DOULOUREUX*

H. B. Lemere, M. D., F. A. C. S., Omaha, Nebraska.

Mr. Chairman and Gentlemen: The case listed on the program was unable to be here, but I have two cases that will probably be of more interest to you than my original case. The first is a case of frontal sinus suppuration which was very interesting to me on account of the fact of its obscure origin.

OBSCURE FRONTAL SINUSITIS

This lady, Mrs. V., aged 63, has a clear family history and has ten children living and well. In her childhood, she had measles, mumps, and chicken-pox. She never had a headache in her life she could remember previous to this trouble. She has had slight difficulty in hearing at times, and she has had a catarrhal discharge in the throat. These are the only symptoms which pointed to head trouble until August 9, 1923, when she fell, striking her forehead and face. She had no immediate trouble from this. Three weeks later the right eyelids became swollen and there was photophobia.

I saw her five weeks after her injury. The swelling had gone down to a great extent, but still there was a definite tumor mass under the right eye lid, well towards the outer part of the brow and there was a great deal of pain and tenderness.

I allowed the swelling to remain for several days, relieving the pain as much as possible. I hesitated to operate for fear it might be a lachrymal gland swelling in which we might have a lachrymal fistula. Examination of the nose showed an atrophic condition. There was an odor on the breath — not the ozena odor, but a slight odor that is often taken rather as a matter of course in individuals.

The eye was normal in every way. The x-ray showed a normal left frontal sinus, and the right frontal sinus was so obscured I was in doubt as to whether it had ever developed, the frontal often failing to develop so that we may have no frontal on one side, while we may have a well developed sinus on the other.

On the 19th of September, fluctuation developed over this tumor and an incision was made, obtaining about two drachms of pus. Free drainage was maintained for a week, but finally the wound closed to a small fistula which remained. The fistula could be followed with a probe down to the depth of almost an inch and bare bone could be felt at the bottom.

Four months after this, as the fistula failed to close, it was considered advisable to explore. Prob-

ably the criticism will be made the exploration should have been made sooner but the fistula was so small and there was such a small amount of pus, every day I hoped the process would subside. An exploratory operation was made with the idea there was a little dead bone at the base of this fistula, and with no idea it had anything to do with the frontal sinus, as it was situated beyond where the x-ray limits of the sinus seemed to be. On opening it was seen at once to connect with the frontal sinus. There was only one procedure possible, a radical frontal sinus operation, and the Killian operation was performed with the object of obliterating the sinus. After the diseased mucous membrane of such a sinus is removed, the anterior wall is taken away and also the floor of the sinus, leaving a ridge of bone along the brow to prevent deformity. If the wound is closed, firm healing may not result. Dr. Sam Roberts of Kansas City advises the placing of a tube giving through and through drainage in these cases, allowing it to remain for several weeks. This was done in my case.

Though this patient thought she had perfect health before her operation she has noticed since this chronic diseased frontal has been obliterated that she hears better and that the odor has disappeared from her breath and that she feels better generally.

TIC DOULOUREUX FROM MAXILLARY SINUSITIS

This next patient is aged 56. Her family history is negative. She has one child living and well. She has had all the children's diseases, and for years has had post-nasal droppings and pain in the left cheek. Three years ago was operated on by an oral surgeon who made an alveolar opening into the left antrum and carried on irrigation for several months, giving relief for a considerable length of time. After the oral opening closed, however, her trouble began again, and gradually increased until 1923, when she presented herself for examination.

At that time she had a typical tic douloureux. I think we should be careful in our nomenclature and not use the term "trifacial neuralgia" for this condition because we have neuralgias which are entirely different in pathology and symptomatology from tic douloureux. A pain in the region of the fifth nerve distribution, even if severe, is not necessarily a tic douloureux. Many false diagnoses are made and many cases called tri-facial neuralgia on account of this failure to differentiate between the two different kinds of pain which result from different pathological entities. Tic douloureux is a

*Given before the Nebraska Section, American College of Surgeons in Omaha, February 18-19.

stabbing, shooting pain and comes with such violence that it causes an anxiety between times. Even though the pain only comes once a week, because of the overhanging threat, the patient is unable to eat or sleep, and wears an anxious expression at all times. He becomes despondent and with the constant dread of the return of the pain, he is often tempted to end it all.

The examination of my patient at the time she presented herself, showed all her upper teeth were out and the gums healthy. The nose has a little pus in both middle meatus. The x-ray showed the left antrum was affected. She had the typical anxious expression and the sharp stabbing convulsive pain. I performed my operation on the antrum of through and through drainage, and injected the second branch of the fifth nerve, because, although we removed the pathology which was the cause of the condition, we can not at once remove the pathology of the nerve which has become diseased secondarily to the bone involvement.

Healing was uneventful with the exception of infra-orbitally where the injection was made there was some sloughing of the tissues and a slight scar resulting. The sinus is clear. There has been no pain from the time of the operation until the present day.

I would like to speak of the cutting of the root of the ganglion for tic douloureux, a procedure which leaves the face numb for the rest of the patient's life. This is without doubt a necessary operation in many cases, but I maintain before such an operation is done, an attempt should be made to correct the pathology underlying these conditions. The infections implicating the bone through which the branches of the fifth nerve run should be removed and the effect on the nerve observed before destruction of the nerve is advocated.

I have previously reported⁽¹⁾ three cases

of tic douloureux treated in this manner. My results have been, the tic douloureux has disappeared, but there is a tendency for the pain to return to a certain extent if the antrum becomes reinfected. The operation, however, leaves a good opening into the nose and through this we can proceed to treat any infection, washing the antrum out and making applications that are necessary, so that a return of the tic douloureux does not mean the operation has been a failure, because with the treatment of the antrum condition comes subsidence of the tic douloureux once more.

As to the operation: The one I think desirable in these cases is a little different than the ordinary Caldwell-Luc operation, which consisted in taking as much of the anterior wall of the antrum out as possible without getting down to the roots of the teeth—giving a large exposure to the antrum. The nasal wall was broken down to a large extent.

In the operation I do, a drill is used, cutting a three-fourths inch hole which is well above the roots of the teeth and well below the infra-orbital nerve. This gives with the headlight a full view of the antrum. A large opening is then made under the inferior turbinate into the nose. In closing this wound, I insert a drainage tube which allows washing through the antrum and nose, keeping them free from any reaction and infection after operation. (Shows Slides).

1. Lemere, H. B. Nebr. State Medical Journal, January, 1922. Vol. VII. No. 1. Page 8.

THE VALUE OF OSTEOTOMY IN THE CORRECTION OF GROSS DEFORMITY*

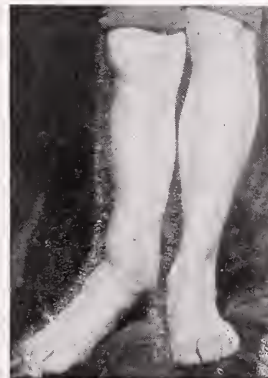
H. Winnett Orr, M. D., F. A. C. S., Lincoln, Nebraska.

Mr. Chairman, Members of the College, and Guests: I have chosen this subject to bring out certain points in what I believe to be the ideal treatment of fracture cases. In these cases one has a fracture produced under ideal conditions, and the treatment, if the operation is right, can be ideal.

I want to combat three or four of the commonly accepted teachings with regard to treatment of fractures. These teachings are found in the literature everywhere.

It is commonly said that a fracture can not be put into a fixative dressing until the swelling has gone down and muscle spasm

has subsided. I have heard a number of sur-

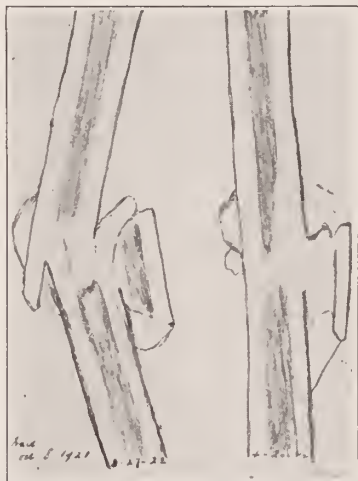


No. I. This man had an old ununited fracture above the ankle.

*Given before the Nebraska Section, American College of Surgeons in Omaha, February 18-19.

geons of prominence and reputation make that statement. A surgeon said recently, "The thing to do is to lay the fractured leg on a pillow and allow it to wait until the

have to come off. It will have been put on too tight; but if it is put on with the idea of maintaining correct length and position of your injured extremity so that the fragments will remain in correct position of their own accord, you may put on a circular bandage plaster cast and leave it without being disturbed if it is properly applied. Personally, I think no one can treat fractures without



No. I-A. In this case the condition shown in the left hand picture existed five months after the femur fracture. There was over three inches of shortening. The patient could not walk. The right hand picture was taken thirty days after correction by osteotomy. The patient walks well. There is less than one inch of shortening.

swelling has subsided before any fixative dressing is put on".

That is bad teaching, in my estimation. I will call your attention to certain reasons why I think so when I show the slides.



No. II. Over a year of treatment and three operations had left the leg in the condition shown in No. I. Osteotomy, traction through the heel and plaster of Paris gave a useful leg as shown in No. 2.

Another common teaching is that you can not put on a plaster of Paris dressing because you will get an excess of swelling and that will make it necessary to remove the cast and destroy your first attempts at fixation. That I believe to be wrong. If one puts on a cast with the idea of actually holding the fragments of the fracture with the cast, of course, that will be a bad cast and



These twin girls, twenty years old, were anxious to have how legs corrected. All four legs were corrected by osteotomy of tibia and fibula on the same morning.



The result about ten weeks later is shown.

plaster of Paris. As far as circular casts on fractures are concerned, I do it regularly, and rarely have to take one off. I believe fractures can be dressed immediately and dressed in plaster; in fact, I know it, because I have done it many times. If the injured extremity is in correct position as to length and line, and the cast applied with the idea of

maintaining correct position, it may be dressed at once.

A common belief is that if you get a shortening, after a certain length of time, it is impossible to correct. It has been usual teaching that if you get a shortening in the femur of two or three inches, mal-union and mal-position, you had better let it alone. As far as this is concerned, it is quite common to advise patients in such cases to let the condition alone, because to refracture such an extremity is considered a dangerous and difficult procedure.

In a recent case in which I advised an osteotomy of the femur, a letter came back from the medical director of the Insurance Company saying the procedure was "useless and dangerous". This was a young man with a shortening of one and one-half inches and a consequent serious disability. That shows how common is this attitude with regard to these conditions.

My practice is that mal-union of the femur and leg, with shortening, should almost always be corrected on the young side of middle life. The results are almost mechanically certain, and good results can be regularly obtained.

With regard to the treatment of compound fractures, they are just as easy to treat as simple fractures if you carry out your mechanical principles. You must immediately — by that I mean as soon as you see the patient — get length, line and position, and maintain that position.

In fractures of the femur and leg, certain equipment and appliances are necessary. Any man who undertakes to treat these conditions should be supplied with such equipment as Hawley or Albee Table, ice tongs, Balkan frames, plaster Paris, etc. If he has not such equipment, he can not take care of these cases.

CARCINOMA OF ANTRUM — SARCOMA OF THE MIDDLE EAR*

Wm. F. Callfas, M. D., F. A. C. S., and D. T. Quigley, M. D., F. A. C. S., Omaha.

Dr. Quigley: We have here a case of small round-cell sarcoma involving the antrum. The subject assigned to Dr. Callfas and myself here today is "Sarcoma of the Middle Ear and Malignancy of the Antrum."

The cases we had of sarcoma of the middle ear have not arrived. Before I show you the lady, I will say a few words about malignancy in the middle ear.

It is very unusual. I believe there are only about thirty-five cases of sarcoma of the middle ear in medical literature, and all of these cases have died. You can imagine it is an exceedingly hard thing to get at surgically, but there is one fortunate thing about it: Very early in the disease we have very acute pain. Cancer, as a rule, is not a painful thing, but when it occurs where we have pressure on some exceedingly sensitive nerve, we have pain early in the disease.

The cases Dr. Callfas and myself have had consisted first of a ranchman from Wyoming, who developed severe pain in the middle ear. The Doctor scooped out some of the material and found sarcoma. We planted radium in the middle ear. Seven years have gone by, and he has made a complete recovery.

The next was a ranchman from western Nebraska. The same procedure was followed. We found a round-cell sarcoma; planted radium in the middle ear, and had complete recovery. Five or six years have elapsed in this case.

We have had four cases of sarcoma of the middle ear, proved by microscopic examination, all cured—

this in very great difference from the cases recorded in literature, none of which was cured.

CASE HISTORY WITH PATIENT

This is a lady from Denver who has kindly consented to come here. We first saw her six years ago this month. She was a patient of Drs. Levy and Eikberg, of Denver. They had found her suffering with a tremendous growth in both antrums, projecting into the nasal cavities, and bleeding. They did an extensive operation; lifted her lip and took out the tumor. Within a few weeks the whole cavity had grown full of sarcomatous tissue again, and it was projecting into her mouth and pushing her eye out of the orbit.

We used a large dose of radium in the mouth, on the outside of the cheek, and in the nasal cavities, trying to get at it in every possible direction. Following this treatment, we used another large dose of radium two months later. Nothing else has been done for her. This was six years ago this month. It had been proven she had a malignant type of sarcoma.

A year ago she came back, suffering with erosion and infection of the ethmoid. You can see the ethmoid has been invaded. Her eye came out by itself. After this infection of the ethmoid we had treatment by autogenous vaccine, and she comes back with the ethmoid completely healed and apparently in perfect health.

Dr. Callfas: I first saw the first case in November of last year. He gave a history of having been struck by a base ball over the left maxillary bone. The eye appeared to be bulging. On examination, we found the maxillary bone was completely absorbed. The x-ray photograph showed that

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the bone was gone. The eye had the appearance of bulging more than it really was; the bone being absorbed below the eye gave it this appearance.

The dentist, in pulling a tooth, noticed no resistance—like pulling it out of butter. The whole antrum was filled with some kind of a mass. I opened it up and took out part of this mass. Dr. Moody is here with the microscope and you can see it shows carcinoma.

Dr. Quigley can tell you about the treatment. All the treatment is his treatment. The patient's home doctor has been washing out the cavity. The patient is 49 years old.

The second case is fifty years of age. He came in 1916 with a hoarse voice and could not speak above a whisper. Examination showed a growth above the left vocal cord. I removed it. It was sarcoma. There was a recurrence several times. Dr. Quigley used radium. The radium burn penetrated to such a distance that it can be seen on the outside of the neck on the left side. There is a scar as the result of the radium burn. So it shows it reaches farther than some people think.

This was seven years ago. The man is here today and speaks in a fairly good voice. The larynx is drawn to the left. There is scar tissue. He is in better health than he has been. He is here to speak for himself.

The other case was a carcinoma of the middle ear. He did not come.

Dr. Quigley, closing the discussion: The only thing I have to say in conclusion is that these cases which we are presenting are cases ordinarily considered incurable. They are cases that are exceedingly difficult to reach by surgery.

The only treatment used in the carcinoma of the antrum is opening up and raising the lip, going up through the mouth, cleaning it out, and planting the radium tubes in the antrum.

(Dr. Quigley then questioned patient treated for cancer of larynx, as follows):

Q. How is your voice?

A. It is pretty good. Sometimes it is kind of hoarse.

The localized malignancies of this kind are amenable to treatment by radium.

The lady with sarcoma of the antrum has a plate. Always the roof of the mouth has been destroyed, and always we have waited at least two years before we have the dentist make a plate so that she can talk plainly. We are afraid of traumatism being set up in some remaining malignant cells, and we wait until we are sure there will not be a recurrence from this cause before we put a plate in the mouth.

ORTHOPEDIC CASES*

J. P. Lord, M. D., F. A. C. S., Omaha, Nebr.

Case No. 1

This is a little girl of ten who had infantile paralysis at three. She was bedfast between five and six years because of right-angled deformities of her thighs and flexures of her knees. She was unable to stand or walk. In order to get her limbs under her

of the muscular attachments on each side of the ilium. The contracted ligaments anterior to the hip joints were freely divided. This enabled us to straighten out the thighs in line with the trunk, then the anterior portion of the ilium stood out through the wound in knife-blade fashion. That was cut off one and one-half inches with a sharp chisel.



1. H. J. Infantile Paralysis when a small baby—subsequent contractions and deformities. Two views. Before operation.

body, we did the Soutter operation. It consists in making an incision in the outer aspect of the upper thigh, across the iliac bone over the crest and under the spine of the ilium, separating subperiosteally all



H. J. Antero posterior and lateral views after operation.

She had a marked lordosis which this bilateral operation corrected and she now stands erect and walks as you see. We have been able to do a positive service for this child. She had been through the hands of many regular and many irregular doctors. The cause of her illness having been paralysis, the prognosis was thought to be so unfavorable that she

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was thought to be incurable. This result was obtained at the University Hospital in two months.

Cases Nos. 2 and 3

These are cases in which incisions were made through the rectus muscle by other surgeons. Both knees are stiff as a result. The man had a compound fracture which was plated, followed by suppuration. It is still discharging.

I want to call your attention to an operation to correct some of the difficulty incident to a rectus that is riveted to the anterior surface of the femur. We did an operation by going in by two lateral incisions, following an anterior incision. We lifted the anterior flap and made a V-shaped incision including the aponeurosis of the rectus tendon. We separated the tissues and fixed the leg at a right angle and lengthened the quadriceps tendon so that he could get a reasonable amount of flexion of the leg. Physiotherapy aided in the result. He walks rather comfortably as the result of the lengthening. We could not separate these parts from the femur because it is still discharging, but this may be done later and fat interposed to prevent readhesion.

This small boy has osteomyelitis and is still discharging. He also had an anterior incision through the rectus and a pint of pus evacuated. He later had a pathological fracture of the femur. A sequestrum was removed three and one-half inches long from the central portion of the femur before he was seen by me. He was doomed to have his leg amputated at the hip; but by Dakinization the periosteum reproduced bone. He is able to walk. He shows disease that extended to the hip joint.

It is undesirable to make anterior incisions in attacking the femur. It is possible to overcome a portion of this defect by a plastic procedure. We hope to do a plastic, and by physiotherapy aim to remove the disability so that he will have a functioning rectus and a useful knee. He has been receiving physiotherapy and has gotten rid of a lot of the edema of these parts as a result. As a precaution against refracture he is wearing a brace.

Case No. 4

This young man of 19, had his left leg run across three years ago by a freight car. When I saw him, a loose piece of his tibia two and one-half inches long had been removed by an immediate operation which had been done. There was very extensive damage to the soft parts which subsequently sloughed. It required one and one-half years to get these bones sufficiently covered, part of which was secured by flaps from the other legs to cover by skin. It required two years to get this limb in condition for osteoplastic work. We were unwilling to go through a suppurating wound. We waited before we did the final work. Union of the fibula was early secured but there was a large defect in the tibia. We shortened the fibula and got union. After this we had an inch of defect in the tibia. He wears a brace part of the time—goes without it indoors. We do not trust him outside without the protection of the brace.

This case and another one which I had wished to show you illustrate the advantage in cases of this kind where you have bone surrounded by scar tissue—conditions unfavorable for ordinary bone grafting. We chiseled off the excess callous which gave

us bone to introduce between the bone ends. Then we took ribbon grafts from the other tibia and built them around this defect that has been filled in with loose fragments and covered the whole. By having the periosteum replaced in this manner by the ribbons to take the place of the scar tissue which surrounded this so completely as to have made difficult the process of Nature's repair; so that by introduction of the periosteum by these ribbon grafts, as in other cases, we find the simplest, easiest, most reliable operation in some of these extreme cases that do not lend themselves well to ordinary bone grafts.

Case No. 5

I will not give the detailed history, because it is only the particular points that are of interest to you. I do not wish to bore you with detail that has no particular bearing on the points I wish to illustrate.

This boy was injured a year ago last November, followed by a suppuration in his knee until March. Last March he was brought to the Methodist Hospital through the intercession of friends who wished to prevent his having an amputation. He had five sinuses about that knee. We had nearly a right-angled contracture and destruction of the external condyle and a lateral dislocation and shortening that represented the whole substance of the condyle.

One of the first things we accomplished was getting this limb straight by traction. We got good lengthening and had it quite well restored and continued to treat the sinuses. This was a staphylococcus infection. While at first he was reduced in flesh and very anemic, under Dakin's irrigation and other methods of treatment continued over many months—he has not been home since last March—we have him straight, with two small sinuses on the outer aspect of his thigh above his knee. On this Thomas splint he has a crutch and we are getting him up. His nutrition is good, and we are sure that we are going to save his leg, and did not jeopardize his life in trying to save it.

I have always maintained that an amputation of any kind, but more particularly a hip-joint amputation in a child or man is a tragedy and should be performed only to save life. I go to the greatest extreme, therefore, to save limbs, more especially in children, because there are a great many disadvantages in children wearing artificial limbs.

FROM A CASE REPORT

"Mother died in infancy.

Father went to bed feeling well, and the next morning woke up dead.

Grandfather died suddenly at the age of 103. Up to this time he bade fair to reach a ripe old age."

"In conclusion, they express as Ehrlich did, their belief that, no matter what arsenical may be used, better results will be obtained from single large doses a week apart than from smaller doses given at shorter intervals."

CONCUSSION OF THE BRAIN ASSOCIATED WITH CARBON MONOXIDE POISONING*

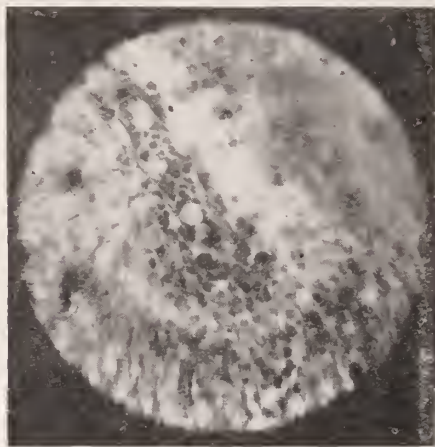
J. S. Welch, M. D., F. A. C. S., Lincoln, Nebraska.

This dry clinic, with report of a single case and exhibition of microphotographic lantern slides of various parts of the brain, is deemed worth while because of the seriousness and increasing frequency of the malady it represents. I refer to carbon monoxide poisoning. The marked increase in the number of cases is largely due to the increased use of the gasoline engine in modern industry. There are many other sources. Our case was due to breathing the combustion products of a picric acid explosive confined in a deep well.

CASE REPORT

G. A. Farmer and well digger. Married. About thirty years old. (Aug. 28, 1923.)

Present trouble: This morning at eight o'clock he went down into a forty-foot well where dynamiting had occurred the night before. He had a peculiar sensation of weakness and dizziness and attempted to climb up the ladder. This he reported to a boy at top of well. When about three-fourths way out, he



No. 1. Small focal hemorrhage about a capillary in the substance of the medulla close to the floor of the fourth ventricle.

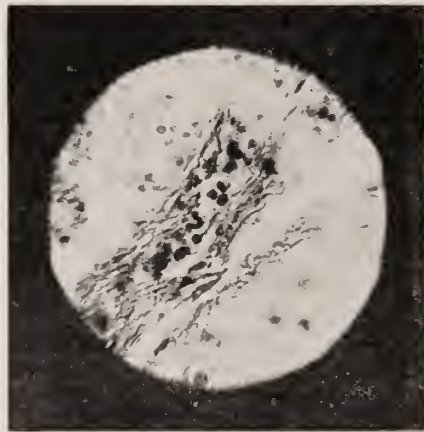
fell back. Another man attempted to carry him out, and when about half way out, together they fell to the bottom of the well, killing the companion. He was removed after not more than 20 minutes' stay in the well, and now, eight hours later, brought in the ambulance to St. Elizabeth's Hospital.

Physical Examination: Patient is violently restless. Has had $\frac{3}{4}$ gr. morphin, but still requires at times manual restraint. There are three large, jagged, muddy, bloody scalp wounds on the top and occipital region of his head. No bleeding from the ears, eyes or nose. Pupils react to light. They are equal. At times they dilate in spite of the morphin. Fundus not examined. Blood pressure not taken. Temperature, pulse and respiration normal. Examination of extremities and body negative except for mild abrasions.

He was given a gas-ether anesthesia and the scalp wounds repaired. No skull fracture felt in the scalp wounds. He was returned to bed in a room flooded with fresh air. Morphin and saline fluids were given.

He seemed quite rational in 18 hours and continued to improve so that on the third day the following letter was written to his home doctor:

"Your patient continues to improve. He is perfectly rational, becoming less and less restless, and



No. 2. Similar area. The capillary shows plainly while the red cells outside it appear faintly, and in outline.

headache diminishing. The scalp wounds look well so far and if the progress continues in this manner, I believe he can be returned to you by the sixth or seventh day."

By the fifth day, mental and nervous symptoms of the puzzling, progressive, changeable kind had begun, and thereafter never ceased until his death on the 27th day.

While carbon monoxide poisoning was considered, it seemed traumatic head injury explained the symptoms so well that we no longer included carbon monoxide poisoning in our working diagnosis. A blood test for CO and coagulation time upon entrance to the hospital might have aided in the diagnosis. This should have been made, although considering the duration of exposure to the concentrated fumes, and the eight-hour lapse in time before seen, I doubt if any known treatment would have altered the prognosis. Had positive findings for CO existed, however, it might have prevented unnecessary surgical intervention.

The nervous disturbances appeared somewhat in a reverse order of the development of nervous functions in early life. On the mental side, reason and speech changes were evidenced first by delusions and hallucinations, and then by delirium and aphasia. On the nervous side, loss of co-ordinated movement, athetosis, paralysis of diverse types, incontinence, hemiplegia, monoplegia and even convulsive movements appeared.

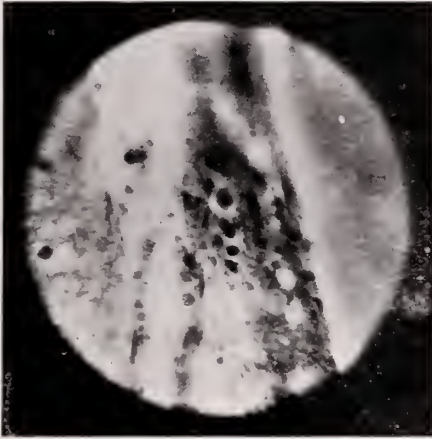
Intracranial pressure in skull fracture after a primary unconsciousness due to concussion would explain some of these symptoms, especially if brain bleeding were continually present. However, there

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was no choked disk, no increased intraspinal pressure and no consistent focal symptoms.

X-ray opinions were somewhat conflicting, and so exploratory trephining, first in the right temporal and later on the left side on two places, was done. Relative normal findings presented. Both traumatic and surgical scalp wounds healed kindly; but the nervous picture briefly stated above continued; the patient lost weight and strength, and died on the twenty-seventh day.

Autopsy by Dr. George Covey on day of death: Cause of death not definitely determined. The only gross findings of moment were a few tiny hemor-



No. 3. The fact often noted that the hemorrhage occurred usually at points of bifurcation, is illustrated here. The cellular infiltration and hemorrhage (slight) shows between the two branches of the capillary.

rhages subjacent to the floor of the fourth ventricle, and slight parenchymatous degeneration of the kidneys. The microscopic findings I will show you by means of lantern slides.

The chief and characteristic findings which we have been able to determine microscopically, are:

1. Degeneration of the capillary walls, and
2. Hemorrhage about these tiny vessels.
3. Most of such lesions occur near the bifurcation of the vessels, and

4. Most appear in the basal ganglion.

It is thought that two things cause those changes in the capillary walls:

1. Oxygen starvation of the endothelial cells, and
2. Toxic effect of carbon monoxide, both of which seem to produce a fatty degeneration of the living cells.

Certain general facts concerning carbon monoxide poisoning are interesting — i. e., .4 of 1% of this gas breathed for 1 hour is fatal. This means there is some real danger to pedestrians in very congested districts of large cities. Also, carbon monoxide combined with hemoglobin is 200 times as stable a product as oxyhemoglobin. Acute poisoning for a short time is not so serious, as slight poisoning over long and interrupted periods.

You know how fatal these things have been. The old treatment was giving plenty of fresh air and bleeding them, and substituting various solutions in place of this blood. In more recent time they have prepared citrated blood and have found they could retain the life of the corpuscles for a considerable time by putting it in Ringer's solution. Some of these cases experimentally have been resuscitated by injecting into the heart some epinephrin solution and then by giving artificial respiration. Then a solution of the above preserved citrated red corpuscles injected. Little is claimed for this method of treatment.

Still more recently, it has been found experimentally that if they use oxygen, together with a 5 or 10 per cent strength of carbon dioxide, that this very stable condition of the blood containing the carbon dioxide became unstable, and the victim liberates poisonous carbon monoxide rapidly. This experiment has been carried on with animals and with human individuals in sufficient numbers so that in large cities where poisoning is common, they are offering it as a very acceptable treatment.

For those of us who see so few cases, it seems to me we might be ready in an emergency way, at least, to combine in the regular gas anesthetic outfit with a rough measurement, oxygen and carbon dioxide, on short notice. We might not get it 5 or 8 per cent, but in proportions near enough that percentage to be a lifesaving measure.

A MARKED CASE OF DIPLOPIA RELIEVED BY OPERATION*

J. M. Banister, A. B., M. D., F. A. C. S., Omaha, Nebr.

The great desideratum in the treatment of cases of fixed diplopia is the securing of single vision, a result most difficult to obtain. It is needless to state in this convention of distinguished surgeons that diplopia is the bugbear of the ophthalmologist in his surgical work.

Since special surgical operation has perfectly secured single vision in the individual, whom I now present in propria persona, I feel that I am justified in calling attention to his most interesting case.

Over three years ago this patient contracted lues and has been under treatment until the present time.

He first consulted me with reference to a most distressing diplopia in January, 1923. His condition of double vision was so extreme as to prevent him from earning his living. He would see singly for a few minutes and then one eye, chiefly the right, would turn inward and upward to an extreme degree. In the presence of lues, with a positive Wassermann reaction, I declined to operate until the following August (1923) when the degree of ocular deviation upward and inward had become permanent and the Wassermann reaction negative for some months. A most interesting fact in this case was this, that there was no paresis of any muscle at any time, as might well be expected in lues.

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The deviation of either eye upward and inward was positive and due to overaction of the muscles supplied by the third nerve, with the exception of the inferior rectus, and not to paralysis of the antagonists. Another very unusual condition was manifested in this case, namely this, that at times one eye would turn upward and inward, and then the other assume a similar position while the former deviating eye would fix. Neither eye would ever turn downward while the other would be fixing.

This marked condition of inward deviation, accompanied invariably by upward deflection of the visual axis of the deviating eye, led me to the conclusion that the chief condition was the high degree of adduction, the upward turning being secondary and associated in consequence of the increased innervation of the superior rectus and inferior oblique muscles, also supplied by the third nerve.

At the time of operation, the inward deviation of either eye was 14 degrees (prism) and the upward 14 degrees (prism), measured while one eye was fixing.

On August 23, 1923, I felt that conditions justified and required operation, as the degree of deviation had become permanent and the patient's state pitiable in the extreme. Believing from months of observation that the internal deviation was primary, I determined to attack by surgical means the convergence excess, and observe the effect upon the sur-

sum-duction, or turning upward. This I did by means of a buried tuck of "OO" chromicized catgut taken in the external rectus muscle of the right eye, the muscle being thus shortened to a degree sufficient to neutralize the excessive convergence. The result was ideal. The diplopia was relieved, the upward as well as the internal deviation remedied, and the patient now has perfect use of his eye at all distances as you can see as I carry a fixation object in every direction before his eyes. He is now earning his living in a way that requires constant use of his eyes in near vision, and is doing his work efficiently and with ease.

It should be noted that the operation utilized was not of the nature of a tenotomy of the overacting internal rectus muscle, but was in fact a tuck shortening of the external rectus muscle of the right eye alone, thereby increasing abduction to a commensurate degree, such shortening being secured by an absorbable catgut suture, which required no further attention.

I have been following this method of operating since 1898, and in these years have learned to value most highly the method brought forward.

This interesting practical fact should be noted, that the patient before you has been enabled by this operation to emerge from a state of invalidism, and to support himself in a useful clerical occupation requiring single binocular vision.

DEMONSTRATION OF A PELVIC CASE*

Chester H. Waters, M. D., F. A. C. S., Omaha, Nebraska.

A pelvic case is of course rather difficult to demonstrate. It is more of a presentation. I have asked this patient to come here because of her extreme pallor and evident anemia.

She was first seen at the University Hospital last October, coming in with complaint of unusually profuse menstruation—a condition which had persisted for seven years. The history is interesting. She is twenty-five; a housewife. Married at fifteen. In this time has had seven pregnancies—six of them being full term. Following her second pregnancy, in which the baby weighed thirteen pounds, she had a bloody discharge which lasted well into the seventh week, and toward the end of that period it became distinctly odorous and disagreeable. From that time on, she has had this unusually profuse menstruation.

Some five years ago she weighed 148 pounds. At the present time she weighs in the neighborhood of 125 pounds. The bleeding has been so profuse at times that during the course of a day a bedpan was half filled with menstrual blood. In other words, it is a case of menorrhagia, there being no bleeding at any other time. The cause, of course, is rather problematical.

When she entered the hospital in November, her hemoglobin was 70; a red blood count of 4,000,000; and a white count of no significance; Wassermann negative; urine analysis negative; general condition, fair. We waited until she had completed her menstruation, which, under rest in bed, subsided in the course of eight or ten days.

Examination then disclosed the following: A markedly relaxed pelvic outlet; a moderate cervical laceration; a tendency to descent of the uterus and pelvic contents; uterus somewhat enlarged, and completely retrodisplaced—the fundus being found in the culdesac. Our presumption, as the result of repeated pregnancies and perhaps incidental low-grade infection which is a factor in sub-involution and retrodisplacement, was that this menorrhagic condition was due to a definite congestion of the uterus.

The pre-operative diagnosis then was retrodisplacement of the uterus and relaxed pelvic outlet.

On entering the abdomen, we found the uterus somewhat enlarged, but the ovaries attracted immediate attention. Each as long as your index finger, was prolapsed, edematous, and had the color and appearance of a raw oyster. Immediately there entered the question as to whether the ovaries themselves were not the cause of this menorrhagia. Over-secretion, excessive stimulation coming from ovaries which obviously were pathological is definitely recognized as a cause of menorrhagia. It was a question whether or not a general reduction in the size of the ovaries would not take care of this unusual menstrual activity and they were reduced to approximately one-third of their size. The uterus was brought forward by shortening the round ligaments. Prior to laparotomy, the uterus was curetted, obtaining an excessive amount of hyperplastic endometrium, and a perineorrhaphy performed. No other pathology was found. She made an uneven but post-operative recovery.

Her next menstrual period was perhaps worse

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than any previous one. Each menstrual period has since been profuse. She was confined to bed during the whole of each period and ergot administered in large doses in the hope we could reduce the flow and give her a chance to pick up. Sufficient time has elapsed, I think, to demonstrate that our conclusions at the time of operation were, in part at least, at fault.

On examination now, we find the uterus is perhaps a little larger than normal and somewhat sensitive, which is a significant thing. The ovaries are definitely palpable and in their normal position—nothing abnormal about them. The uterus is in its normal position and well forward; so the feature of some mechanical cause as a factor in the continuance of her menorrhagia is out of the question.

That brings us back to the question of the etiology. I am convinced, based on the experience we have been through and our findings, that we are dealing with a typical instance of uterine insufficiency or myatrophy. The pathology of this condition is interesting and not infrequently seen. The uterine musculature under the microscope in a case of this sort is definitely reduced and replaced by hyaline material and accordingly the contractile power of the uterus is reduced.

The question now comes up as to what we can do

for this woman? She is entirely dependent upon her own resources in the support of herself and children. She can do nothing but work which permits sitting, so we are very anxious to get her into a condition where she can make her livelihood. The treatment perhaps most adequate and justifiable in this case would be, in my opinion, a supravaginal hysterectomy, or perhaps a partial amputation of the uterus, thus reducing the menstruating surface. To be perfectly certain in not having a recurrence of this trouble—and in this I am borne out by other gynecologists—a hysterectomy is the surest way.

The use of radium and the x-ray has been advocated. Radium introduced into the uterus will not improve the condition of the uterine musculature, and would tend to increase the fibrosis and degenerative change that already exists. Any benefit coming from radium or x-ray will come through the further destruction of ovarian function. There is a question as to what should be done. I am convinced the most satisfactory way would be to remove the uterus. But she is a young woman and the operation is rather formidable, and I regret the necessity to do it. She is just finishing menstruation after a very profuse flow of nine days, and her general condition is as you see it.

URATE SODA AND CHOLESTERIN NODULES ON THE TENDONS*

A. F. Jonas, M. D., F. A. C. S., Omaha, Nebr.

J. L. Age 50. Clerk. Presented himself with a number of nodules on his hands and feet, ranging in size from a hickory nut to a large walnut. These nodules were located on the extensor side of the fingers, elbows and toes. They were found on the middle portions of the phalanges. They were freely moveable, upwards and downwards and from side to side. They seemed to be located subcutaneously. The skin over them looked normal in appearance except that it seemed somewhat attenuated but not adhered to the nodules themselves. These nodules were slightly irregular upon their surfaces but strictly circumscribed as if contained within a capsule. There was no tenderness or pain nor discomfort nor had there ever been.

All these nodules began with very small circumscribed masses that could just be felt beneath the skin. They gradually enlarged, the larger ones had been in the course of development for a period of 14 years. They did not encroach upon the joints in any way nor did they interfere with flexion and extension of the fingers. Movements of the phalanges seemed to have no effect upon them.

The first one developed upon the dorsal surface of the third phalanx of the middle finger of the left hand. This one was 14 years old. It was midway between the joints. There was no pain or discomfort of any kind. The next one began developing about two years later upon the dorsal surface of the little finger of the left hand. About two years later a nodule developed above the olecranon process of the left elbow. This has attained the size of a small hen's egg. About five years ago they developed upon the dorsum of the 2nd and

5th phalanges of the right hand, one of them had attained the size of an English walnut and the other on the little finger, the size of a large hickory nut. About the same time, there developed upon the right elbow above the olecranon process another which was about the size of a small hen's egg.

You will observe in this skiagram, which is the right foot, a mass developed over the dorsum of the metatarsophalangeal joint about the size of a hickory nut, another over the middle portion of the metatarsus, same toe. Both of these are circumscribed and moveable, apparently immediately beneath the skin. Over the dorsal surface of the metatarsus of the little toe, we find an ulceration which is the result of the breaking down of a similar nodule forming an ulcer from which is extruded a white tallowy and chalky substance. The patient tells us that this ulcer has formed a number of times and has become completely healed over, then the process has been repeated. Nodules on this foot have been in the process of formation for nearly ten years.

Left foot: There is a nodule the size of an English walnut on the dorsum of the 2nd phalanx of the great toe. Another over the dorsal surface of the metatarsus, same toe. Another nodule over the medio-tarsal joint, same foot.

TREATMENT

One of these nodules was excised from the ring finger of the right hand. The skin was dissected off very easily because it was lightly attached. The nodule was excised. No indication of a tendon in the growth. After it was removed it was discovered that the extensor tendon had become infiltrated with a tallowy and chalky mass. The individual

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fibers had become widely separated. It was then found that this mass was apparently within the tendon sheath which had been widely dilated so as to accommodate the infiltrate. If you can imagine a skein of silk, the threads of which have been very closely packed together and then suddenly there is a separation of all these threads by an infiltration with tallow and chalk, the threads passing entirely through the mass all of which is held together with a very thin covering of silk, the latter representing the outstretched tendon capsule which extends down to the closely packed strands of silk on each side of the enlargement represent the tendon, we have a fair mental picture of the new formation. We were then satisfied that this infiltrate was in the substance of the tendon separating its component fibers. Having learned the result from this first attempt at removal, we proceeded to operate upon the middle and little fingers of the left hand. After

the skin had been dissected back, we cut through the enveloping sheath and dissected out a strip from the center of the growth which represented the extensor tendon. The remaining portion of the masses were removed. The infiltrate between the fibres representing the tendon were carefully squeezed out, leaving a cord which now performs the function of the extensor tendons. The skin incision was closed which held without disturbance.

COMMENTS

An examination of the material composing these masses proved to be made up largely of urate of soda and some cholesterin. There was some lipoid tissue with giant cells and quite extensive small cell infiltration. The infiltrate was contained between the tendon fibres in some of its parts, in other areas the infiltrate was contained between whorls of loosely connected fibrous strands.

GOITER*

Delmer L. Davis, M. D., F. A. C. S., Omaha, Nebraska.

I am presenting to you this morning a few cases of goiter, not that it is more important than any other subject. It is doubtful if any particular subject of our work is of greatest importance. We are dealing with the human anatomy and human economy to help to make better citizens and a better class of people; so that every one of these things which enters into the conservation of that physical betterment is equally as important as the other features.

I thought best to present a few cases.

Case No. 1

My first case which I wished to show is of simple goiter. The mother told me the individual is sick in bed. Inasmuch as there is a little evidence of heredity, I will just give a word or two regarding the case which you do not see. Her age at the present time is fourteen. At twelve the menstrual function was established, and one year thereafter there was a swelling of the neck. It is of the simple type and the symptoms negative. When examined Friday, the temperature was 98 degrees; pulse 78; blood pressure 80 over 50—rather low—being the only thing aside from the swelling of the neck that would establish the diagnosis of goiter—certainly not a toxic goiter because the appetite was light and there was no loss of weight. There was definite absence of tremor; so that if I could have presented this case, it would have been a nice case of simple goiter.

Case No. 2

This is the mother of the case I have briefly recited to you. There are two daughters—one eighteen and one fourteen. Both have goiters. The mother has goiter. Briefly, the history of this mother is this:

About twenty-three years ago she had a tonsil-

lectomy. Two years thereafter she noticed a swelling of the neck. It is also interesting to learn from the history of this patient that the grandmother on the maternal side had a very large, pendulous goiter. At the present time this patient's appetite is excellent—almost to the point of being excessive. In spite of this, she does not put on weight. The tachycardia at the present shows 98, elevated by slight exercise; temperature 99 and one-fifth degrees; blood pressure, 128 over 70. Eye signs in this case are absent, and the tremor is negligible. It is of the type which has been active from the standpoint of the thyrotoxic condition, and is now in the retrogressing stage. It is no doubt fibrous, plus a colloid type, and she still has some of the symptoms. I can not say what factor enters into this arrest. It is readily palpable, being a little larger on the right side, as most goiters are.

Going back to the daughter of this patient (No. 1) who is fourteen years of age, the goiter she has now is what we look upon as being a compensatory, adolescent or physiologic economy. The thyroid enlarges to meet the demand of iodine the patient's physiologic economy throws upon the whole system at that time. Another example of physiologic or compensatory goiter is the enlargement of the thyroid during pregnancy.

Case No. 3

I first saw this young lady Thursday and prevailed upon her and her father to bring her over this morning that I might show you an unusual goiter of the exophthalmous type. She is eighteen years of age. At thirteen plus, the menstrual function was established, which now is fairly normal. The symptoms are negative. At six years of age, when she started to school, there was noticed a definite error of refraction. Her study material must be close to her. She was taken to an excellent oculist and an examination made and no encouraging advice given. She did not benefit much from wearing of glasses.

Five years ago she had a tonsillectomy done, perhaps on general principles and at the same time this

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was done, the doctor in charge examined her eyes and later fitted her with glasses. I am personally indebted to this person for referring her to me.

From a personal examination, without metabolic reading, she has a slight tachycardia. Under moderate exercise the pulse goes to 110. Its tension is variable and it is not definitely regular. Her temperature is 98 and two-fifths degrees, and the blood pressure is 110 over 74.

Now come the eye symptoms, which are the positive things, plus the swelling of the neck. She has visible exophthalmos, very obvious, and the characteristic symptoms which go with it. There is increase in palpebral openings which gives the Dalrymple sign—the visibility of the sclera above and below the cornea. She also has the von Graefe's sign in which there is a delayed lowering of the upper lid as compared with the speed of the eyeball as the eye is turned downward. The Moebius sign is present with this girl which shows an interference of the third nerves—the inability of the eyes to converge as the finger is drawn toward the center of the forehead—an inability to converge both eyes upon this object.

These are revealed to me as far as I have gone. There has been no metabolic test. It will later be done. (Later—metabolic reading showed a plus 65.—Unexpectedly high.)

Case No. 4

This patient is one of three sisters. Two of them have goiter. To better get the sequence of events with her I might say she was operated upon two years ago next month. Two years previous to this operation, she noticed a little lump on the right side. Almost all of these cases notice the beginning of the increase in their neck on the right side. One year later, another tumor was noticed on the left side. In November, 1921, she had an injection of anti-toxin and soon thereafter she noticed the thyroid began growing rapidly and her nervous symptoms were greatly increased. Examination at that time showed the appetite was excellent. These people usually have a very ravenous appetite due to heavy tissue burning, but they progressively lose weight. She lost thirty pounds in three months. Her normal weight is from 130 to 135 pounds. At this examination it was 98 pounds. She was profoundly exhausted, with a pulse of 190, regular and full; temperature 100 degrees. She had very high pulse pressure—in fact, the systolic was 164 and the diastolic 64. She was highly nervous.

She went into the hospital, and after nine days of rest the pulse had dropped to from 80 to 108, as against 190, and the temperature on this date was 98 and two-fifths degrees to 100 and two-fifths degrees. There was some definitely established exophthalmos at that time. The metabolic reading dropped from 67 to 48 in these days in bed.

A bilateral lobectomy was done. The patient became a definite risk on the table; was very restless and the pulse went high. Immediately upon return to bed, she received digalen intravenously and again about the end of the first 24 hours; thereafter the recovery was satisfactory. The pulse gradually reduced during her stay in the hospital and afterwards it remained in the 80's.

A definite observation of this case was that she

persisted in running a slight elevation of temperature. It is interesting to note one of our large clinics states there is no explanation in the chemistry and economy of the thyroid to explain elevation of temperature in all these cases. It is a definite observation so far as my limited experience goes. Two authors who have had an opportunity to make vast observations and have written thereon, state the elevation of temperature is practically a constant thing in their observations and is most naturally accounted for because of the excessive tissue combustion.

At the present time this metabolic rate runs 18; pulse, 84; temperature, 99 degrees. She is not yet normal on temperature. She has lost the tremor and the exophthalmos. Her appetite is good, and she says she feels fine, aside from the fact she has this little part of a degree of elevation of temperature and her pulse continues in the 80's. She weighed the other day 149 pounds as against 96 pounds when she left the hospital two years ago—a gain of 53 pounds.

Case No. 5

This lady was operated upon three years ago under local anesthesia. Two years before this time she noticed some enlargement of the neck. Six months before the time of operation the goiter took on a rapid growth. There was tachycardia and neurosis; tremor; mental disturbances; irritability and general hyperneurotic condition. Physically, there was marked embarrassment of respiration and deglutition and some hindrance to the return blood supply from the head. She persisted in having these headaches.

The specimen removed at operation was examined and the microscope revealed a hyperplastic goiter with a mixed condition of colloid cystic degeneration.

An interesting thing is that immediately following the operation she lost her voice. Naturally that gives one a little bit of anxiety if it is one of the very early experiences. This subsided during her first forty-eight hours, but some variation of the voice persisted for two weeks. A temporary interference with the voice following a local anesthesia is not an uncommon thing. There now is a pulse rate of 82 and a temperature of 98, and a little elevation of blood pressure 170 over 110; metabolic, 5.

Case No. 6

I pass to the next case. She is one of the sort of patients who gets well and stays well from her operation, which was in 1917, now nearly seven years ago.

Case No. 7

This is the patient on the stretcher. She was admitted to the University Hospital January 28. The complaints were palpitation, hunger, tremor, exophthalmos, spasms, cough, and headache. The onset was thirteen years ago, nervous palpitation followed by hypertrophy of the gland. Operation seven years ago at Kansas City and a portion of the right gland removed. Four years ago at Rochester she was operated upon on the opposite side. She was well until a year ago when she noticed difficulty in swallowing. X-ray plates show there is quite a displacement of the trachea and the larynx to the right. She has an enlargement on the left side,

where one can feel it is nodular and irregular. Her pulse was 140; temperature 100 degrees; respiration 28; blood pressure, 150 over 95, on entrance to the hospital.

Her record today is pulse, 90; temperature, 98 degrees; respiration, 25; blood pressure, 130 over 70.

Under rest in bed and with the use of the Lugal's

solution, her metabolic readings have come down from plus 75 to plus 40.

This case must be looked upon as one of the cases of passing from a benign adenoma through the stages to that of malignancy. It evidently reaches the latter now. She has an impairment of voice which I shall demonstrate by having her speak a few words.

A CASE OF TUBAL PREGNANCY WITH RUPTURE OF THE UTERUS*

Henry A. Johnson, M. D., F. A. C. S., Tekamah, Nebraska.

In response to your program committee, I felt justified in reporting the following case because it was a novelty for me and I feel that it is rather unusual in the run of general surgical practice. Of almost equal interest, is the observation of the wonderful things that our human economy can cope with, and of the perfect termination of unusual abdominal pathology, only because of the supreme efficiency of both omentum and peritoneum.

This patient is interesting to me because of her history as well as operative findings, and I shall give that in detail. In the concluding portion, I shall briefly touch on the literature of such conditions.

Mrs. L. P., age 33, married for 13 years and with two children, aged 8 and 6, with no subsequent pelvic history or miscarriages. She has always been well, not remembering any illness and having had no operative work at any time. Labors were both normal in all respects. For the past 6 years she has been living in the west.

She returned to her Nebraska home because of present illness and reported to me for examination on December 12, 1923, after a three day train journey. Her story, corroborated by husband, is that she missed her always regular menstruation during the last of June, 1923. She had felt well prior to this and continued in good health until the first part of August, at which time she commenced to have gastric symptoms which she attributed to pregnancy. As the time progressed she noted that she was having considerably more trouble with the stomach than during former pregnancies. This discomfort amounted to real attacks of paroxysmal pain, coming on at intervals of about 10 days, stopping during the latter part of September. At this time she had a slight show of blood, but called no counsel until one night in early October when she had a sudden sharp abdominal pain and collapse. The husband reports that she suffered intense pain and was very anemic in appearance, which condition persisted for many days. Her medical help at that time consisted of rest in bed, remedies of a quieting sort with cold packs to the abdomen.

After a few days in bed, she got up to attend to work, finding the same difficult on account of extreme weakness and more or less constant left

abdominal pain. The sudden pain of former attack was not localized in her cognizance, but now seemed to be in the left iliac fossa. From the time of the onset of sharp pain and the collapse, she persisted in showing a slight vaginal discharge of blood, bright red in color. For this she received some medical treatment and being of no avail, her physician advised tamponading because of the diagnosis of inevitable abortion. This was done about the 14th of November. One or two tamponades produced no results, and then a catheter was introduced into the uterus with vaginal packing around the same. Pains, uterine in character, came on and with the expulsion of the catheter, the physician reported that there was no evidence of a pregnancy. Consultation was then had in Portland and after examinations and x-ray pictures were made, a diagnosis of uterine tumor was made. Patient asked about safety of a trip to Nebraska, and the same was advised as all right. During all of this time, the patient and husband were impressed with the enlarging abdomen and the tumor mass which was causing no alarm, because of the assumption of pregnancy.

After her experience with the last tamponading and the catheter introduction, she had no unusual or different symptoms. She continued to have a constant but scant bloody flow and was constantly having more or less abdominal pain. She noted enlargements of the breasts with lactation and was having more trouble with constipation and a stubborn abdominal distension.

Physical examination on December 13, 1923, showed a temperature of 99.4, pulse 102, weight 110, a loss of 20 pounds since her advent of illness. Her general appearance was that of an anemic. Other physical findings except of pelvis and abdomen were negative. Blood count, white, 8600, red 4 million. Systolic pressure 102, diastolic 60.

Objectively she showed a globular mass rising above the pubic region, which would suggest, according to size, about a six months' gestation. On palpation this mass seemed to be somewhat irregular and extending more to the left flank. The mass was not movable and it was tender. There was some rigidity in the left rectus muscle. On vaginal examination the cervix was found to be freely outlined, firm, not swollen, somewhat elongated and able to be distinguished posteriorly for over an inch. Its identity was then lost in a mass which was hard, more to the left and immobile on bimanual manipulation. There was a projection of this firm mass down into the left cul-de-sac. All portions seemed hard and firm. No fluctuation could be detected. It was impossible to outline the body

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of the uterus. Examination caused considerable pain. The right abdomen seemed to be free from trouble and there did not seem to be any projection into the right cul-de-sac. In view of the catheter treatment that had been given, I felt it proper to ascertain the uterine depth and position by extremely careful sounding. The sound allowed easy introduction for two inches, then struck a hard mass. The cavity of the uterus seemed to be toward the right. No extra blood or fluid followed this procedure.

A diagnosis was made of an old ectopic rupture, into the folds of the left broad ligament, with subsequent and recurring hemorrhages enough to produce this mass and anemic appearance. Abdominal section was advised and submitted to on December 17, 1923.

A generous median incision was made and an omental covered mass of about eight inches in diameter presented. The omentum was very adherent and the vascularity was excessive. By incising between ligatures, this was freed only to discover many coils of small intestine with plastic exudate still forming a cover to a palpable hard mass deeper in the abdomen and true pelvis. Up to this time, no uterus was seen. The abdomen showed free turbid serum. There seemed to be a firm attachment of the mass to the left parietal peritoneum. When the intestines were carefully teased apart and freed from the mass, a dead foetus of about five months gestation was found. The length was about 27 cm. and weighed about 280 grams. With this was a considerable quantity of degenerated and macerated placental tissue. This was in the general peritoneal cavity. After carefully scooping out the friable and macerated placental tissue, I could then observe the uterus with a hole near the left tubal region of about three inches in diameter. This size is judged from the remaining portion of the walls and the right tubal site. The left tube was missing except showing at the extreme distal portion in the attachment with tissue to the left parietes. The mass that was felt to be so hard through vaginal vault was made up of numerous organized blood clots with placental tissue. Bleeding was fairly profuse, probably because of some placental attachment and circulation from uterine walls and from peritoneal attachments. The remaining portions of the uterine walls were so friable for such a distance from the opening that repair was deemed out of the question.

Accordingly, a subtotal hysterectomy was done leaving only a portion of the right ovary which seemed to be normal tissue. A good pelvic floor was built and after appropriate drainage, the abdomen was hastily closed. Measures to combat shock and hemorrhage were instituted. The post-operative course was fairly uneventful. Drains were out by the fifth day and the patient was ready to leave bed, according to her feelings, by the fourteenth. However, on account of the numerous and large vessels that were encountered in her work, I kept her in bed for 21 days, thus feeling that she would be less apt to complicate a pleasant recovery by an embolism. She was discharged from the hospital on Jan. 9, 1924, feeling very well and with a slight granulating wound at site of drainage tract. Vaginal examination gave no pain, the cervical stump free and mobile with no discomfort.

The subject of ectopic gestation is an intensely interesting one. And the condition is probably not so uncommon as we are wont to believe. Formad reports in Ashton's Practice of Gynecology that he observed 35 ectopic gestations in a run of 3500 autopsies. That seems to bring the incidence up to a point of a more commonplace condition. A hasty outline on the pathology may not be amiss and help us to decide what took place in this patient's abdomen, and why.

The causes of ectopic gestation may be divided into intra- and extra-tubal. Under the first heading we would list chronic salpingitis, neoplasms, congenital malformations and displacements of viscera. Under the second, we would be most apt to blame adhesions or tumor masses. For an etiological reason in my patient, I am at sea. Her previous health history gives me no clue.

In classifying tubal pregnancies, we may use the natural anatomic classification, namely the ampullar, which is most frequent; the isthmic, which is next in frequency and last, the interstitial which is credited as being the rarest type.

During the course after pregation in any of these forms, the tubal tissue becomes hypertrophied, swollen and greatly increased in vascularity. The abdominal opening tends from a progressive contraction to a closure at about the eighth week. Then follows distention and a thinning of the walls in proportion to the ovum growth. The change in the uterine body is interesting and pertinent with the case here reported. It is considered that the uterus, with the advent of tubal gestation, hypertrophies with progression and there is formed the decidua vera. The cervix also presents the usual changes incident to a pregnancy.

The uterine growth continues as long as the ovum is growing. If the pregnancy advances, so does the uterine size, with some limitation, showing at a near full term ectopic case, a uterus size expected at a four month gestation. When the ectopic goes on to any length, the decidual membranes may be expelled en masse or in fragments with the scant bloody show.

Our ectopics rupture in three directions: Into the abdominal cavity, between the folds of the broad ligaments and into the uterine cavity. I would here invite a distinction between the rupture cases and the tubal

abortion cases. The latter type, those in which the ovum is expelled through the tubal end and most usually before end closure at about the 8th week.

Rupture into the abdominal cavity from any of the three types usually means a severe hemorrhage and calls for prompt surgical intervention. This hemorrhage is worst from the interstitial type. Rupture with its bleeding invariably means foetal death. However, growth may continue if the membranes are not torn and if the placental attachment is left more or less intact. The older theory peritoneal attachment is now generally disregarded.

The second type of rupture is into the folds of the broad ligament and is more apt to occur from the ampullar and isthmic varieties. This sequence is not so common from the interstitial ectopic. The broad ligament rupture has its good points. The hemorrhage is not apt to be so alarming on account of the tendency of limitation, but should the ovum life be retained, a secondary rupture is most sure to happen. The pelvic adnexa suffer in a proportion to hemmatocele pressure.

Rupture into the uterus could allow a continuance of pregnancy to term, or invite expulsion of the intra-uterine portions. End results would depend on placental attachment.

The time element of rupture is interesting. It takes place earlier in the ampullar and isthmic types, probably averaging around the eighth week. The catastrophe is delayed in the interstitial sort. Rupture time on these

being placed as averaging about the 16th week.

I am aware that this does not cover all of the points so pertinent in these cases. In the diagnosis one can so easily wonder when he feels masses and irregularity of tissue outline. I went on record as to my preoperative diagnosis. I feel as though any one would have diagnosed as much, but frankly I did not expect to find a foetus of that size in the peritoneal cavity, with placental tissue that would fill a litre cup. I was interested in the uterus which had attained a size, judging from remains, that one would encounter in a four months' gestation; and, also, what could have caused the hole in the same and maceration of its walls. Then, too, there was more vascularity in some of the placental tissue than one would expect, unless life had passed only a short while before.

To me, it seems, one of two things happened. She had a rupture into the broad ligament at the time of her first pain and collapse with a continuance of foetal life and growth. This then may have gradually thinned the ligamentous layers until the eye could not detect them at operation, and considered the only covering to be abdominal contents. Some process of tissue degeneration at the site of uterine contact, may account for the changes in its wall.

The second possibility is that she had an interstitial type of pregnancy with the pressure of growth exerted more away from uterine cavity than toward it, and yet with sufficient involvement of uterine wall in attachment to go with the pregnant mass when rupture occurred.

A CASE OF KUMMEL'S DISEASE*

J. E. M., Thomson, M. D., F. A. C. S., Lincoln, Nebraska.

The symptom complex in Kummel's disease is truly a post-traumatic spondylitis, and is characterized by three stages. The first stage is that following the primary injury during which the patient has the symptoms of back injury to a variable degree. Second is the stage of "feeling well" during which there are no symptoms of back trouble for months or even years. The third stage is that of return of back symptoms, the evidence of injury to the back, of a deformity of the spine, kyphosis. The x-ray

findings of a compression fracture, or compression of vertebra.

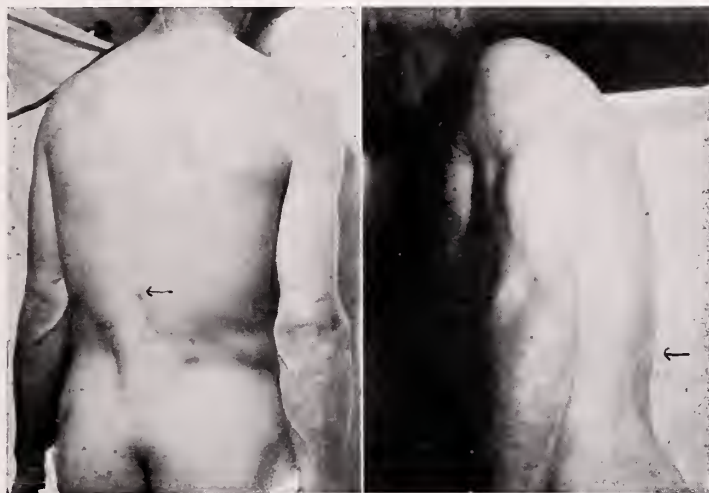
This condition was first described by Kummel in 1895. He described it as a traumatic rarefying osteitis. In the literature of the next few years articles appeared in the foreign periodicals on this subject in rapid succession. In 1918, Frazier, in his treatise on "Surgery of the Spinal Cord and Spine", described the condition, and the same year Glazer reported a case in "Medical Clinics". In 1919, R. H. Baker described the condition in the October issue of "Surgery, Gynecology and Obstetrics," and in 1921 Brausch review-

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ed Kummel's disease in the March issue of the "Annals of Surgery".

This brings us to 1923, when at the meeting of the American Medical Association in San Francisco, Dr. Fosdick Jones of Denver, gave the most comprehensive review of the literature that has been given at the present

al work of Lange in regard to weight pressure being brought to bear on the vertebra and its action. Lange found when he brought weight on the vertebrae that they would stand pressure up to certain degree and then there would be a compression of not only the vertebra but the intervertebral disks. When



A Back view showing kyphosis in region of first lumbar vertebra and spasticity of back muscles.
B Side view showing kyphosis.

time. He gave the literature exhaustively and took up every phase of this disease in an excellent manner and reporting his own interesting case of a child that had Kummel's disease. This article recently appeared in the Journal of the American Medical Association.

Kummel's second article came out in 1921,

the weight pressure was removed one of two things happened, either the vertebra assumed its original shape or it collapsed.

In this article, Kummel bears stress on the fact it is not necessary for an actual fracture to exist. He believes traumatism to the spongiosia of the vertebra suffices to cause atrophy and a compression of the bone.



A X-ray showing fracture of lumbar vertebra and compression of bodies.
A Antero-posterior position. Note listing of vertebral column.
B Lateral position. Fracture of body and compression of bodies above and below.

in which he makes an effort to correct misunderstandings regarding this condition. Particularly does he speak of the experiment-

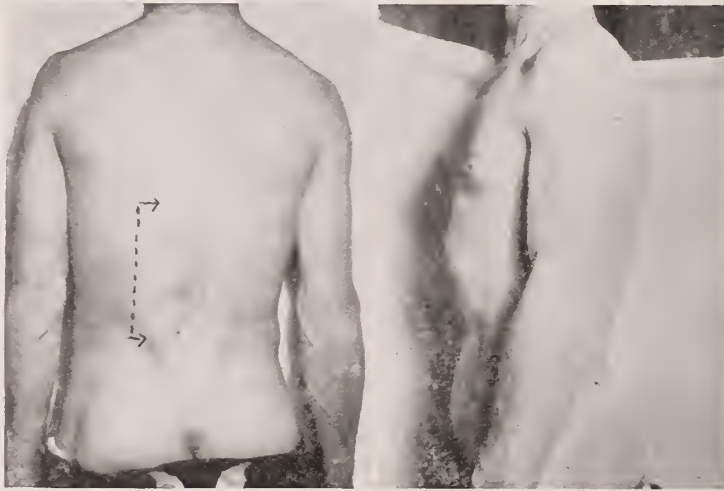
There may be only a slight contusion of the spongiosia with hemorrhagic infiltration and periosteal thickening. He lays great stress

on the characteristic symptom-complex — that of your initial injury with evidence of direct traumatism of the spine, then after the period of non-symptoms, the appearance of symptoms; deformity and the diseased condition, of changes in the bone itself.

My own case is that of a farmer thirty-five years old, who, in January, 1923, was in a runaway and the wagon ran over him. He was unconscious a short time and taken home with severe pain in the back, descending into the right lower extremity. He was in bed two weeks. Gradually the symptoms left him. There was no apparent evidence of spinal lesion. The condition cleared up and he went about his work during the spring and summer until July, when, while pitching bundles after a hard day's work he was seized with severe pain in the back, extending to his extremities. He crumpled to the ground and had to be carried to his home. His

body of the first lumbar vertebra with slight compression of the vertebra above and below. A listing to the right was demonstrable. From the history and examination a diagnosis of Kummel's disease was made.

I advised this patient of the seriousness of his condition and explained to him that the treatment consisted first of a rest in bed in a plaster of Paris cast until all his symptoms had disappeared and that operative intervention would be considered if he did not improve as he should. He stated that he would put off treatment for a little while as he could not bring himself to give up at this time. In September, after seven days and nights without sleep due to the severe pain in his back and extremities, the poor fellow returned in a desperate condition ready to destroy himself if relief could not be given. His condition had gone on so long that I felt it necessary to put him to bed for a few days with head and foot traction in order to obtain a



A Back view, five months after operation showing scar.
B Side view five months after operation.

symptoms did not respond to the treatment for back sprain and lumbago. He went from bad to worse, of necessity spending a great deal of his time in bed with terrible pain. Finally he was referred to me by Drs. H. H. Everett and J. C. Thompson of Lincoln and Dr. Henry Hein of Wilbur, about the middle of August.

On examination I found a kyphosis in the region of the first lumbar vertebra with listing towards the right beginning in this region, cord-like spasticity and rigidity of the muscles on both sides of the spine, tenderness on palpation of the lower back muscles, extreme pain and tenderness on pressure or pounding on the first lumbar vertebra. Tenderness was more marked on the right side. The back throughout this region was stiff and any effort at movement caused pain which extended down the right lower extremity. With the patient lying in a prone position, flexion of the right leg on the abdomen caused such severe pain that further examination was abandoned. He could scarcely walk and every movement was accompanied by discomforting symptoms.

X-ray by Dr. R. L. Smith showed fracture of the

certain amount of relaxation in the back. With this the symptoms disappeared and in a few days a fusion operation was performed to adequately ankylose the spine well above and below the site of injury. The technique described by Hibbs was followed in performing this operation. Plaster of Paris, double body and leg spica for eight weeks, than a body cast for one month, and now he is in a brace apparently cured. He expects by spring to do his farm work, in his brace, of course, but with time he can discard that.

In conclusion let me say that we often view injury to the spine too lightly as their symptoms very often disappear to a great extent after the accident, only to appear with greater severity later and show vast destruction to the spine. We have noticed this very often in industrial cases though they are not at all similar to the symptom-complex Kummel's disease, yet I am sure that Kummel's disease exists more often than is diagnosed and I firmly believe that had my patient been placed in a plaster cast and kept absolutely quiet for eight weeks following the accident he would never have developed Kummel's disease.

TRACTION FRACTURE OF THE LESSER TROCHANTER*

J. Frederick Langdon, M. D., F. A. C. S., Omaha, Nebr.

I wish to present two cases, which are of interest, chiefly, because of their rarity.

CASE 1

A boy, age 12, came under my observation October 3, 1919, with the following history: While running home from school, suddenly he felt something "snap" in his right hip. He fell down, but was able to get up immediately. He stated that it was painful but not of undue severity. He was able to get home alone, a distance of one-half mile. He said his leg dragged, so much so that he had to take hold of his thigh with his hands and pull it forward in order to take a step. On arriving home, he complained of some pain, but his mother stated that he did not cry or make much fuss about it. I first saw him 3 days after the injury. At that time, his mother stated that the boy was having no pain, but was not walking properly. On asking him to walk, he proceeded in a very unusual manner. He stepped forward on his left foot, then grasped his right thigh with his hands and drew it forward, after which he would bear his weight on the injured leg without any apparent pain, again stepping forward with the left leg. In this manner he crossed the room, stating that he felt no pain at all. Further examination revealed no swelling or discoloration about the hip joint or thigh. Deep pressure in Scarpa's triangle elicited pain, but not severe. There was no shortening of the limb. On lying down, the leg assumed a position of slight external rotation. Passive movements were normal in all directions, and not painful. The great trochanter was in Nelaton's line. The predominant sign seemed to be loss of active flexion of the thigh. When standing or reclining, the patient was unable to flex the thigh. Also, while sitting he was unable to raise the limb from the horizontal position (Ludloff's sign). Patient was removed to St. Joseph's Hospital, where an x-ray photograph showed a separation of the epiphysis of the trochanter minor.

Patient was put in bed and a plaster-of-Paris cast applied, immobilizing the hip and knee joints. The limb was placed in slight flexion and abduction. At the end of three weeks, the cast was removed and the patient was allowed up on crutches, which were discarded at the end of 2 weeks. At the end of six weeks, the patient was discharged, restoration of function being complete.

CASE 2

The patient, a boy 16 years of age, came under observation November 17th, 1923, with the following history: While engaged in a game of football, was running with the ball. In trying to avoid being tackled, he twisted suddenly on his left leg. Felt a sharp pain, which for a moment was very severe. He walked over to the side lines. He says in leaving the field his leg dragged, so much so that he had to take hold of his thigh with his hands and pull the leg forward at each step. He sat down, not suffering much pain. After a short rest, he went back in the game, and played for about ten minutes. He was able to stoop over, and pass

the ball without any trouble, but could do no running at all. After the game he went home, walking in the same manner as before. Examination, four hours after the injury, showed a sturdy boy, 16 years of age, lying in bed, apparently suffering no pain. Pressure over Scarpa's triangle produced intense pain, accompanied by spasm of the muscles about the thigh. Passive motion was normal in all directions, except in abduction, which was slightly limited. There was no swelling or discoloration about the hip joint. When lying down patient could flex the thigh on the leg, but when sitting upright he could not lift the leg from the horizontal position (Ludloff's sign). On being asked to walk, he was unable to bring his left leg forward. He overcame this by pulling his thigh forward with his hands. An x-ray photograph revealed a separation of the epiphysis of the trochanter minor.

Patient was dressed with leg in slight flexion and external rotation, immobilization being secured by a plaster-of-Paris cast. Cast was removed at the end of two weeks, and patient allowed up on crutches. At the end of six weeks, crutches were discarded, and patient discharged as cured.

On looking up literature, I was surprised to find scant reference made to this class of injury. Ruhl of the Frankfort Clinic, in Oct., 1920, published a detailed account of all reported cases, and, up to that time, was able to find but 22 cases. Poston, in the British Journal of Surgery, one year later added two more to the number. In the April issue, 1923, of "Surgery, Gynecology and Obstetrics", I published an account of one of these cases (Case 1) this being the first, so far as could be learned, mentioned in the American literature. "The Twenty-Second Report of Progress in Orthopedic Surgery," published by Osgood, Allison and associates in the Archives of Surgery for Jan., 1924, makes mention of this case, and one of the editors states that an identical case has occurred in his practice. He gives as his opinion that this injury is probably of more frequent occurrence than commonly believed, and will be found more often if looked for. The fact that a second case has come under my observation within three years would tend to confirm this view. The chief points of interest in this injury are:

1. Its rarity. Only 25 cases reported up to April, 1923.
2. The fact that 77% of cases occur between the ages of 10 and 20, when youth is particularly active and ossification of the trochanter incomplete.
3. The mechanism of the fracture: The essential etiological factor is sudden strain

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on the ilio-psoas muscle. The injury occurs when the body is suddenly thrown backward in such a manner that its whole backward weight is thrown on one leg, with a resulting sudden strain on the corresponding ilio-psoas. This muscle in its efforts to right the body, undergoes a violent contraction, with consequent detachment of the lesser trochanter.

4. Ludloff's sign: Ludloff first called at-

tention to the fact that with the patient in the sitting position, flexion of the affected limb is impossible, though with the patient recumbent, flexion may occur. This clinical finding is considered pathognomonic.

5. Treatment: This is simple and effective. Limb is immobilized by cast or splints, with thigh in slight flexion and abduction. Restoration of function is usually complete in six weeks.

THREE CASES OF OSTEOMYELITIS*

A. C. Stokes, M. D., F. A. C. S., Omaha, Nebraska.

I have had some little experience with several cases of hematogenous osteomyelitis. I wish to present three cases that show end results. I shall make no generalizations from them, nor discuss the pathology of chronic, or even acute, osteomyelitis. In the light of the work that has been done lately our ideas are becoming more crystallized as to acute osteomyelitis and some of its complications relative to origin and the directions of extension of the infection. We are practically convinced of one thing, whatever the infection may be: Acute osteomyelitis practically always begins, if not in the epiphyseal line, very close to it, and on the diaphyseal side of the epiphyseal cartilage.

If you will review your cases, you will find all beginning acute osteomyelitis began with symptoms near the joint and practically in the epiphyseal line. How the infection may extend from that point is not quite clear. Dr. Starr thinks in almost all of these cases it extends, not up the medullary canal, but through the thin bone at the diaphyseal-epiphyseal junction and shells the periosteum off, and the damage is done by subperiosteal extension of the infection.

This is no doubt true in certain cases; but in a good per cent of cases it extends along the medullary canal. In my own experience I have not seen any cases where the infection has extended primarily into the main cortex of the Haversian system of the bone itself and left the medullary canal and the periosteum free.

CASE HISTORIES

The first case fell into my hands three years ago. She had had a general history of rheumatism. No diagnosis was made for a considerable time until she fell into the hands of a good surgeon, and a

diagnosis of chronic osteomyelitis was made. An operation was done; drainage was instituted, and she returned home only to have the infection recur again in a short time. She was taken to one of the large clinics of this country and the same thing was repeated. She came back. Then she was operated on the third time by another surgeon in this community, and finally she happened to fall in our hands.

I wish to call your attention to our procedure. I am quite aware there may be criticism on what we did in this case. She had an infected femur — the worst kind of infection I know of, where within the canal localizing abscesses formed at several points. There had been infection under the periosteum. It had been raised off the bone and developed another bone under the periosteum, an involucrum. This is the character of the case as nearly as we could make the diagnosis at that time, i. e., an involucrum formed about the dead eburnized bone within which were localized abscesses.

We made rather a long incision and chiseled from one epiphysis to the other one-half of the bone, until what remained of the medullary canal was open throughout its entire distance. Then instead of allowing the soft parts to fall over and cover the bone we sewed the periosteum to the skin, and let it stay with the bone lying wide open to the air. Needless to say, this began to heal almost beyond expectation. It got well—that's all. In a few weeks she went home.

Unfortunately, we sent her home with a small cast that was not thick enough. She fell and broke her leg. She returned with a broken femur the bone of which was exposed. We took a piece of bone from the tibia and secured it to each end of the break to hold the ends in position, and without trying to close it. In a few weeks the bone began to heal from each end. The bone plate came off and the fracture healed, this all with the bone exposed. The defect present can be easily remedied by dissecting up the skin and bringing the edges together over the bone. For two years she has been well.

At first she had considerable knee trouble. That is gradually disappearing. For a while she walked on her toes. Now she walks fairly well. There is nothing to get infected and no place for infection to remain except possibly under the periosteum on the other side of the bone; no intramedullary infection is possible.

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SECOND CASE

This is a case we see occasionally of acute osteomyelitis. It was brought into the hospital and a diagnosis was made of acute arthritis of the knee joint. An incision was made and the knee drained, and no pus. It is generally easy to find the point of maximum tenderness although it may be near the joint it is never in or over the joint. Unless there is extraordinary swelling and tenderness, it is fairly easy to find the point of maximum tenderness. You can put your thumb on it. In this case evidently the examination was not made thoroughly, and a diagnosis of knee joint infection was made and the joint was drained.

Then about this time the case came to us and a diagnosis of chronic osteomyelitis was made. Acute osteomyelitis lasts but a few hours. If we can do the proper thing and get drainage at once we may save the bone, so far as I am concerned, I have no fear of its attacking the bone even in acute infections. In this case, the infection remained pretty fairly localized around the epiphyseal line. We cleaned out everything and chopped off the corners of the upper end of the tibia so the tissue could fall together. It is hard to do this with a chisel. In certain cases it can be done readily with a small circular saw or a dental drill. In this case we used a circular saw to trim the edges of the tibia after we had scraped all the epiphyseal area away, always being careful not to injure the cartilage. You can take the whole epiphysis out if you do not injure the cartilage. We cleared away all bony elements to the epiphyseal cartilage, and with the exception of the scar and the trouble with the knee, the results are satisfactory. It was not necessary to have even this amount of stiffness, but there was so much tenderness after the operation we did not move the knee as we should.

THIRD CASE

This is another form of the same kind of thing—a case of what we may call an acute fulminating type of osteomyelitis—the kind of case that happens occasionally.

Where does the infection travel and what are its limitations? Location and limitations varies with cases. In this case, it simply shelled the periosteum off the tibia from one end to the other. We could get the feeling of something soft underneath, along the entire distance of the tibia. We made a long incision. There lay the tibia in a bed of pus almost loose. All one had to do was to cut through the periosteum and the pus welled out, and the tibia was practically entirely dissected off the periosteum. We readily lifted it out with a pair of forceps. We took the entire tibia out. It does not look it now. I do not mean to report it is anything new at all, but to show how the bone re-forms. The entire wound was left open.

It finally closed in and the new bone formed until we have a very good tibia, but it began to discharge from both ends again. We thought there must be something wrong, and we went in at both ends and took all the newly formed bone off down to the cartilage, leaving the ends as flat as possible.

The lower end has absolutely healed. There is still a little discharge from the upper end at times. I had an x-ray taken the other day, and I am

afraid there is still a little sequestrum left in there. We attempted to get everything out. If we can get all the dead bone out — or whether we do not, if we can get good drainage, the dead bone will come out itself. The drainage is the *sine qua non*, if we can get it right.

I have not said anything about the formation of sequestra because I think it is another chapter, and is the end result of a poorly managed acute osteomyelitis — and a bad end result. If we can get a case before it forms, sometimes we can prevent sequestra formation by proper drainage and operation.

I know many will think these operations are somewhat radical. I am not sure the ordinary conservative teaching is right, and I am not sure I am right.

SOME CASES OF CORNEAL DISTURBANCE*

James M. Patton, M. D., F. A. C. S., Omaha, Nebr.

I desire to present the corneal manifestations of hereditary syphilis illustrated by a five year old boy with a four plus Wassermann and the usual physical appearance of hereditary syphilis,—bossy forehead, defective teeth, lines about the mouth, etc. When first seen the cornea of each eye was completely hazy and there was intense photophobia. Vigorous treatment with mercury, salicylate, atropine, and hot applications plus a course in neo-salvarsan was entirely ineffective for a month, after which the child began to improve rapidly and when shown, the peripheral half of each cornea was practically clear with a progressive clearing of the remainder.

I also wish to call your attention to the fact that while most of these cases appear in early life, usually before the fifteenth year, we occasionally see them after thirty, and any case of intractable interstitial keratitis, no matter what the age may be, should have a careful serological examination for lues, as failure to recognize this condition can very easily result in permanent damage to cornea while proper treatment almost always results in marked improvement and complete functional recovery. I want to emphasize the use of the older lines of treatment, mercury, salicylate, Fowler's solution, atropine, and heat, and in addition urge the intravenous use of neo-salvarsan and I am thoroughly convinced that it is of great value even in the very young.

“Boveri has shown that it is possible to fertilize a portion of the cytoplasm (devoid of any nuclear material) of the sea urchin's egg with the sperm; also Loeb has succeeded in fertilizing the ovum by chemical means without the sperm. Adult frogs have been developed by mechanical stimulation of the eggs. We thus see that chemical and mechanical factors have the power to stimulate unlimited growth.”

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THE APPENDICO-BILIARY SYNDROME*

Max Emmert, M. D., F. A. C. S., Omaha, Nebr.

Presentation of three cases showing different phases of the subject. Deductions from 28 cases.

- 1—Gallbladder disease occurs as a part of a syndrome and never as a single entity.
- 2—It is always preceded by and associated with hepatitis.
- 3—Approximately 75% of cases are secondary to appendicitis and 25% to infections about the head.
- 4—Outstanding symptoms are:
 - a—Indigestion—especially inability to digest fats.
 - b—Distress upper right abdomen starting from one-half to one hour after meals.
 - c—Gastric distension associated with eructations of gas.
 - d—Constipation.
 - e—Dizziness.
- 5—Outstanding physical signs are:
 - a—Gastric Distention.
 - b—Tenderness and spasm over gallbladder on deep inspiration.
- 6—Gross pathology at operation. Gallbladder varies from apparently normal organ to thick walled viscus. Color of liver varies from pink to a beefy red. Size may be normal or extending below costal margin. Microscopic—round cell infiltration of the wall of the gallbladder most marked in the submucous layer.

CASES:

Case 1—Mr. C. C., Fremont, Neb., business man aged 40, seen Aug. 23, 1922, complaining of nervousness.

P. H.—Scarlet fever at 21, typhoid at 22, pneumonia at 23, in hospital 2 mos. Same year had a cervical adenitis diagnosed as Hodgkin's disease. Appendicitis at 24 in bed three days. Ptomaine poisoning one year ago. Hay fever every year for 26 years. Tonsils removed 1921. For years following physical labor noticed a pain in the right abdomen. Ten years ago had dizzy spells and for several years had attacks of weakness followed by cold sweats. Has had no dizzy spells since removal of tonsils.

P. I.—Began ten months ago following attack of ptomaine poisoning with nervousness and loss of weight. At that time developed considerable indigestion which was accompanied by bloating and abdominal pain which was relieved by enema or physic.

P. E.—Sparely built man of the nervous type. Throat good condition. Modified breathing right apex.

Abdomen—Marked gastric distension. Marked spasm over appendix and gallbladder.

Patient placed on routine appendix-biliary regime, under which symptoms cleared; gained weight; tenderness disappeared from over gallbladder region, but remained over appendix.

Feb. 23, 1923—Appendectomy was done under local anaesthesia.

Appendix was firm, large and white in color. Tip partially pinched off by scar tissue. Lumen contained three fecoliths. Mucus membrane much thickened. Definite chronic appendix.

Note—Patient has gained markedly in weight, digests food well and has no digestive disturbance.

Case II—Miss H. C., Kimballton, Ia. School girl, aged 15, was seen July 5, 1921, complaining of pain in the right side.

P. H.—No serious illness.

P. I.—Began about a year ago with pain in the right abdomen which was of the jarring type. No sensation of distension though eructates gas. No constipation. Frequent temporal headaches. Nauseated at times. One light attack of jaundice several months ago.

P. E.—Negative except for a marked spasm of the entire right rectus. Pronounced tenderness over the appendix. Slight over the gallbladder.

Appendectomy—7/6/21 Appendix large, slightly congested containing fecoliths. Mucus membrane markedly ecchymotic. Gallbladder felt normal at time of operation.

Sequellae—Relieved for several months. 9/30/22 patient returns complaining that for several months has been troubled with pain in the upper right abdomen and gastric distension.

P. E.—Examination revealed marked tenderness over the gallbladder and distension of the stomach. Placed on routine treatment for a month. 10/25/22—Patient returns complaining of similar pain to that from which she suffered prior to operation, and constant pain under the right costal margin. No cramp like pain, feels bloated, no food relation, no constipation. Nauseated frequently. One vomiting attack. Pain under ribs worse when lies on left side.

Examination—Marked spasm upper right rectus. Very tender over gallbladder extending towards right kidney. Tenderness increased over gallbladder with patient lying on left side. Marked gastric extension.

X-ray Examination—Right kidney slightly larger than left. G. B. extends below lower costal margin. Catheterized specimen of urine normal.

Operation—10/27/22—Liver extends below costal margin and very dark red in color. Gallbladder distended but apparently normal. Removed. No glands along the ducts. Closure without drainage.

Pathological report—Marked round cell infiltration throughout wall of gallbladder. Patient had a normal convalescence and left the hospital on the tenth day. Was placed on a diet and routine medication.

Extract of letter Jan. 12, 1924:

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"I have been feeling quite well lately but once in a while I get sore in my side and then I feel tired at the same time, but it is getting better all the time."

Case III—Miss E. P., Elkhorn, Ia., aged 20, college girl, referred 1/28/22, complaining of pain in her stomach.

P. H.—Diseases of childhood. Operated elsewhere for abscessed appendix Feb., 1919. Appendix had not ruptured. Six months later reoperated at the same clinic for adhesions.

P. I.—Began on the day she sat up following second operation (Aug. 1919) with sudden sharp pain in upper right abdomen radiating to the right and accompanied by vomiting. The pain lasted several hours and was followed by soreness in same region which persisted for several days. The vomitus was of a bitter greenish type.

Since that time had had repeated similar attacks which has been diagnosed gall stones by a number of physicians. Attacks becoming more frequent. Has had two during the past five weeks. Thinks she was jaundiced during an attack two weeks ago. Is constipated requiring cathartics. No food relation to attacks. No indigestion between attacks. Has lost 7 lbs. during the past five weeks.

P. E.—Negative except for a marked tenderness in the gallbladder region and well defined spasm of the upper right rectus. Following test meal nothing was recovered in one-half hour. Attempt at Lyons-Metzger drainage failed. Clinical Diagnosis—Cholecystitis with probable stones.

Operation—2/8/22. Stomach examined and normal, kidneys normal size, pelvic viscera small, adhesion region of appendectomy scar. Gallbladder small, tense, and dark bluish in color. Did not empty on pressure. When strong traction was made emptied easily. Small gland along cystic duct. Gallbladder easily removed and abdomen closed without drainage.

Gross pathology—Gallbladder apparently normal. Unfortunately this was not sectioned.

Patient made a normal convalescence and left the hospital on the tenth day.

Sequellae—10/30/22, patient returned. Since operation has had no attacks of pain. At times feels weak. Dizziness and headaches have been frequent and pronounced. At times has marked gastric distension. Feces normal color. Has gained in weight until four weeks ago. Since then has lost ten pounds. No food distress. Eight days ago became markedly jaundiced.

P. E. Sclera and skin markedly icteric. Liver extends two fingers breadth below costal margin and quite tender. Heavy bile reaction in urine. Patient placed on medication and diet.

Jan. 15, 1923—Extract of letter: "I feel a great deal better but am bothered a great deal with headaches. I am very tender over the upper part of my abdomen but have no pain. My color is good just now but I often turn a brownish yellow which remains several days".

Jan. 26, 1924—Extract from letter: "At the present time I am not feeling very well, although somewhat better than a week or two ago. It seems to be my liver. I have been very jaundiced but it clears up again. Am also having considerable pain down my right side. Otherwise have been more well the past six months than I have for years."

Extract from letter, attending physician, Jan. 26, 1924: "Patient came to my office Jan. 24th, complaining of almost continuous pain and distress over upper abdomen mostly to the right and this pain radiated back under the right shoulder blade; loss of appetite, extremely pale and weak. Considerable gas with eructations and this was increased upon taking food. No relief from lying down or application of heat. Tender over pit of stomach and gallbladder area, but most tender over McBurney's point".

Note—This case to me means not only continued presence of a hepatitis but the possibility of a chronic pancreatitis.

These cases I think show not only the different gradations of infections of the liver but the absolute necessity of treating the liver after the removal of the primary foci.

CHOLELITHIASIS DURING THE SYMPTOMLESS STAGE*

A. J. Brown, M. D., F. A. C. S., Omaha, Nebraska.

My patient decided she did not want to present herself in person. She is a woman who is without symptoms at the present time and I have the only thing we have been able to find in the way of pathology with me in the x-ray films, so her presence is really not necessary.

I want to use this text to speak about what to me represents a definite phase of gall-bladder disease, referring particularly to that type of gall-bladder disease in which calculi are a factor. The fact that you find teaching, by so great an authority as the late Sir William Osler, that gall stones in them-

selves cause no pathology and are not a dangerous proposition, and that people can live with them for a long, long period of time—in other words, a symptomless stage of gall-bladder disease, naturally leads to the inference that they need no surgical treatment. This, I believe, is fallacious.

CASE HISTORY

The patient I was going to show to you came to me because she had fallen and broken her wrist. She is a woman of forty-one.

I first saw her in 1922. Going back in her history, I found that five years before she had had an attack of acute pain in the upper abdomen that lasted about eighteen or twenty hours. Subsequent to that she had two or three other attacks. The pain then disappeared. When I saw her, as far as pain or any

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abdominal discomfort except an occasional period of nausea after over-eating, she was perfectly normal—considered herself so. In taking radiographs, we found these distinct calculi situated in the right hypochondriac region, passing into the cystic duct. Having seen several cases of this type, I reviewed a few of my recent cases of cholecystitis with cholelithiasis with the object of discovering whether or not this latent symptomless stage is of common occurrence. In nearly every one of my cases I find a history of an attack which comes in the 30's or when the patient is a little younger. This consists of an attack of pain in the right hypochondrium and epigastrium. The cases of this type that I have operated on early after the primary attack show a gall-bladder which is a little enlarged. The wall is not particularly thickened. It contains bile. There are a few stones, and the cholecystectomy is performed without much difficulty. The patient makes a good post-operative recovery and the percentage of recurrence is practically nil.

In the middle and late 40's, the story changes. Let me give you an example of a woman forty-eight years of age. Her first attack was ten years before. No symptoms until three weeks before I saw her. Operation showed an acute cholecystitis, a thickened gall-bladder wall, and adhesions. The symptomless stage in this patient lasted approximately ten years. During that time there had been a chronic productive inflammation going on in the wall of the gall-bladder and making an excellent foundation upon which a subsequent slight infection can build an acute condition which is very serious and may place the life of the patient in danger. In some cases the head of the pancreas may be involved and add further to the danger when an acute attack does come on.

The next type goes on another ten years. These are the patients in the late 50's or middle or late 60's, who come with a long period of no symptoms—maybe twenty-five years—and then in the 50's and 60's they develop jaundice. In other words, gradually the stones have passed down—or they have formed in the hepatic or common ducts—and there is jaundice; and we are up against the most serious type of gall-bladder disease save one which comes on usually in the 50's, and gives rise to an acute empyema of the gall-bladder.

It is practically admitted at the present time that gall stones are formed as the result of bile salts being deposited around a small foreign body which is usually a small particle of mucous membrane, in which lipoid changes have occurred and this particle has been separated from the remainder of the membrane. If this view is accepted, we must consider that this same process of stone formation goes on in the hepatic and common ducts. Further evidence that this is the method of formation is furnished by the fact that jaundice and symptoms of stone in the common duct rarely follow an attack of acute biliary colic. The difference in diameter of the cystic and common ducts is so great that any stone which passes through

the cystic into the common duct will, in the great majority of instances, pass through the common duct into the intestine. There is, therefore, in this latent period a chronic inflammatory change which spreads gradually into the ducts and a cholangitis is added to the cholecystitis. Consequently, when the acute symptoms come, surgical interference must include surgery of the ducts as well as of the gall-bladder.

It is commonly accepted that in the 30's appendicitis is not so frequent as it is in the 20's. Appendicitis is a disease of adolescence and early adult life. In the 'teens and the 20's. This teaches us that pain in the right side of the abdomen in the late 20's and early or middle 30's without, of course, the symptoms of gastric ulcer, is much more liable to be gall-bladder disease than it is to be appendicitis. Most of these cases give a history of operation for appendicitis some years before without relief, and on later operation we find cholecystitis with or without gall stones.

Following the primary attack, there is in the great majority of instances, a latent period. Recurrence after the first latent interval consists in an acute cholecystitis engrafted on a chronic. After recovery from this without operation comes the period of development of stones in the common duct. As time goes on, the operation—the surgical care—becomes more difficult.

It seems to me we are justified in telling these patients in whom we are sure—or practically sure—that we have to deal with a cholecystitis, to have something done, especially if there is cholelithiasis with it, and not advise them to "Let sleeping dogs lie." I think we have too generally accepted the idea that gall stones in themselves are harmless things. They are not. They are continually stirring up trouble, and appear to have a definite life history. We must watch, at least—if we do not advise operation—in the so-called "symptomless" stage of cholelithiasis.

WHY WORRY

Everywhere are smiles to spare
And everywhere a song—
Our good old world can run itself
And keep from going wrong.

—Wilbur D. Nesbit.

THREE CASES: ORBITAL INFECTION—FOREIGN BODY IN BRONCHUS— ACTINOMYCOSIS*

John B. Potts, M. D., F. A. C. S., Omaha, Nebr.

First Case:

This young lady had a severe cold the last week in December, and the next morning when she awoke her left eyelid was puffed. It has remained that way ever since—some mornings worse, and some better. She has no findings in the eye ground, her vision is normal and the excursion of the eyeball is normal. She has had almost no pain. There is a slight ptosis and apparently a little exophthalmos, the latter being an optical illusion.

This is an orbital infection secondary to an infection of the nasal sinuses from a cold. Three days ago, I opened the left frontal and anterior ethmoid cells. The bone was soft and the cells filled with a thick pus.

Immediately following the operation, the swelling over the eye increased. Then for two days—Saturday and Sunday—it went down. This morning it is swollen more again, showing that there is probably a fistulous tract from the ethmoid or frontal sinus.

Second Case:

This child has always been perfectly healthy. Was a normal birth, and has had no serious illness until the present one. Last September, while eating peanuts, she had a sudden fit of coughing after which she was apparently all right. Since then, while she has not been sick and does not have a chronic cough, she has never been quite normal. When she gets excited or cries, and sometimes when she lies down or changes her position, she will apparently have some obstruction of her bronchus. Her parents have noticed since the first coughing spell that there is something peculiar in her breathing which they describe as a "funny little rattle."

The radiograph is negative. With this history we feel justified in making a diagnosis of a foreign body in the bronchus. She has a bronchitis now with numerous loud rales in both lungs. There is nothing definite to indicate where it is located.

Jackson says in his description of these foreign bodies that when a well child insufflates a foreign body it will have a sudden fit of coughing and choking, oftentimes so severe it gets black in the face, and then quiets down if the object is not too large, and there are intervals when the child is apparently normal. Then something stirs up the foreign body and the child has another spell of coughing. Sometimes it will be quiet for a day. Other times it will have violent spells of coughing at periods during the day.

If it is a pin or some smooth, hard, substance, it makes little irritation, after it has been in the bronchus a short time. If corn or peanuts, there is more or less irritation which sets up an inflammation, and a bronchitis with a discharge. If the foreign body does not block the bronchus, the air goes in and out and you may not hear much of anything on auscultation. If you have a body as large as a whole or half peanut, it will usually block one bronchus, and you will find breath sounds increased, on one side and none on the other. It is the side on which there is no breath sound that the foreign

body is located. If it is not large enough to close the bronchus, there may be a whistling sound as the air goes by the foreign body. Sometimes, if a grain of corn is so large that it will not go in either bronchus, it will remain free in the trachea, and there will be times when it will lodge below the vocal cords in the larynx, and the child will almost suffocate. If he does not, but sucks it back, he breathes easy again.

We get more grains of corn and peanuts in this part of the country than other foreign bodies. Sand-burs are frequent in the fall, but they practically all lodge between the vocal cords. Dr. Jonas used to take these foreign bodies out through a tracheotomy, years ago. I suspect at that time those loose in the trachea were the lucky ones. Now they are more liable to be disastrous than those impacted in a bronchus.

Third Case:

This gentleman was well until six weeks ago. At that time he noticed a swelling in his neck which was very hard. He consulted Dr. Flynn in Plattsmouth. Dr. Flynn thought it was probably secondary to an acute inflammation of the throat that had been very prevalent. He treated it with various remedies and after a month it apparently broke. There began to be a discharge on the inside of his throat which gave him some relief.

I saw him at that time. We tested him thoroughly for an actinomycosis which he might have contracted on the farm, but he had absolutely no evidence of anything of that kind. There was no history of any such infection among the animals of his farm. On account of the fact that he was so very much relieved after the discharge began, I told him to go home and have Dr. Flynn watch it.

Instead of its receding, it has grown more extensive. From its sudden onset, it would seem to be most likely an infection. Although, it is possible he may have had an enlargement for some time which had gone unnoticed until it became infected and painful. In this way it would be possible to explain the condition on the assumption of its being an infection and an acute flare-up of a carcinoma. The next step in his treatment probably would be an excision of a portion of the growth for further examination for actinomycosis, or the fungi, or carcinoma.

Question: What has been his treatment?

Dr. Potts: He had ice on his throat. Since the abscess broke, he has had heat. One radiation Saturday.

(Discussion by request)

A. J. Ochsner, M. D., President American College of Surgeons, Chicago: I think this is a case of actinomycosis. Three out of every four cases of actinomycosis are reported negative by the laboratory. You should give these patients ninety grains of potassium iodide at six in the morning in one-half pint warm milk and followed by one pint hot water. Repeat this again at two in the afternoon and at ten at night. To keep sufficient potassium iodide in their systems, you should never give less than 90 grains at each dose.

Give it four days; wait a week and give it four

*Given before the Nebraska Section, American College of Surgeons in Omaha, February 18-19.

days again; repeat it with weekly intervals, and the growths will melt away. Then after the patient is apparently perfectly well, one must continue giving potassium iodide in the same amounts for four days. There may be some little pocket containing the parasite to which it does not reach; while if you give potassium iodide in that way once a month for a year or so, they are safe.

We have had a number of examples of that where they were apparently perfectly well, and in a year or so they would flare up again. A case of actinomycosis, or almost the identical case you have in this patient, came in after over a year with a recurrence, nearly choking to death from an edema of the glottis.

We have found that if you give smaller doses it may stimulate the trouble. We had one case where it began at the upper angle of the jaw and progressed to the middle of the side of the head. At that time we thought an ordinary dose of 15 grains and increasing it one grain each day would do good. It never touched him until he received over 60 grains three times a day when the disease began to disappear. Being located so superficially the process could be observed especially well.

We had another experience in which the infection was actinomycosis. We continued the treatment for a month. When we stopped, it flared up again. The ray fungus has spores not touched by the potassium iodide. For that reason the veterinarians do not give it continuously, but give it and stop and then give it again; so that when the spores have started to grow, the potassium iodide kills them.

Give never less than 90 grains at a dose, and give it so they will have a sufficiency of potassium iodide all the time.

Dr. Potts: Do you gauge the dose according to the weight of the patient?

Dr. Ochsner: No; we give 90 grains in every case at intervals of 8 hours always in one-half pint of warm milk followed by a pint of hot water.

Dr. Potts: I think the doctor's suggestion is very well taken.

WANTED: MORE PHYSICIANS

The growth of medical quackery, asserts Harvey M. Watts in the *Trend*, is not entirely due to popular ignorance or the knavery of fake practitioners. To some extent, he thinks, quacks prosper because of an acute and growing shortage of qualified physicians, particularly general practitioners, who are willing to treat patients at home.

In twenty years the number of medical schools has been reduced from 180 to 60 and the number of medical students in attendance from 28,000 to 17,000. Moreover, the medical students of today spend more years in training, so that the decrease in graduates is even more marked than the decrease of students, only 2,529 getting diplomas in 1922 as against 5,742 in 1904.

These changes resulted from a demand, highly proper considering the times and conditions, for higher standards and better

training; but it is a grave question whether the policy of restrictions has not gone too far. The 1920 census shows only 144,977 physicians and surgeons in the United States, as against 151,132 in 1910. While the population was growing nearly 14,000,000 the number of physicians and surgeons in practice decreased more than 6,000. There was one physician to 729 inhabitants of the United States in 1920, as contrasted with one to 608 inhabitants in 1910.

In many country districts the lack of nearby medical assistance is serious. It would be worse were it not that the motor car enables a physician to cover a wide territory. Physicians have been coming to town faster than their patients. While 47 per cent of the population of the United States lived in cities of more than 5,000, the latter contained 63 per cent of all the physicians. In some rural areas the need for medical services has become so acute that the community guarantees a minimum income to the resident physician.

Medical science has never been better financed or more effective than in the United States today; yet the country lacks doctors, and quacks have an easy time accordingly. This paradox should be corrected, and the Rockefeller and Carnegie Foundation, which led the fight for fewer and better doctors, might well take up the problem. More medical colleges may be needed; or perhaps there should be schools definitely organized to train bedside doctors who would turn to the highly trained specialists for frequent advice and assistance.

It can be put down as certain that the United States is not disposed to stint itself on medical attendance. Unless the profession grapples with this problem and makes good the shortage of personnel, further extensions of State medicine are likely, despite the fact that neither the majority of physicians nor the majority of the public care for that forced remedy.—Editorial, N. Y. Herald.

WHAT IS CHIROPRACTIC?

Doctors of Medicine have been condemning chiropractic without really knowing just what it is. So—here is the definition as given out by none other than D. D. Palmer himself, who never having been hindered and detained by medical knowledge, can give an unbiased definition.

"Chiropractic," he says, "is a name given to the study and application of a universal

philosophy of biology, theology, theosophy, health, disease, death, the science of the cause of disease and art of permitting the restoration of the triune relationship between all attributes necessary to normal composite forms; to harmonious quantities and equalities by placing in juxtaposition the abnormal concrete positions of definite mechanical portions with each other, by hand; thus correcting all subluxations of the spine, atlas to coccyx inclusive, for the purpose of permitting the recreation of all normal cyclic currents, through nerves, that were formerly not permitted to be transmitted, through impingement, but have now assumed their normal size and capacity for conduction as they emanate through intervertebral foramina—the expression of which was formerly excessive or partially lacking named disease. (To replace the full quota of positive with an equivalent negative; permitting the reconveyance of the intelligent immaterially into the mechanical corporeal.)”

Just a minute. It is not necessary to read it again. You got it the first time, all that is permitted to you—all that you will ever know. You cannot comprehend it—proving that chiropractic is an incomprehensible thing. But the definition is all right as definitions go. It is perfectly legal. You just don't understand these legal documentary terms if any. No, it is not misprinted—the printer did not mix it up—it is all English and in order, and sanitary. It's just over your head. You see you studied medicine and that disqualifies you. You have to study chiropractic say six months and then you can get it,—they can read it forward and backwards, “permitting the reconveyance of the intelligent immaterially into the mechanical corporeal” 'n'ev'rything. Boy, aint that language cerebellar tantalizing convolutions constipatedly speaking. If any.

If this be reason make the most of it.

—H. N. J. in Medical Herald.

NONUNION IN FRACTURES: THE MASSIVE BONE GRAFT

Of 221 cases of nonunion analyzed by Melvin S. Henderson, Rochester, Minn. (Journal A. M. A., Aug. 11, 1923), 184 were traced; 138 have obtained union, and forty-six failed to obtain union. The nonunion was in the lower extremity in 133, and in the upper, in eighty-eight. The femur was involved in seventy cases, forty in the neck and thirty in the shaft; the tibia in fifty-four;

the forearm in forty-six; the radius alone in twenty, the radius and ulna together in eighteen, and the ulna alone in eight; the humerus in forty-one, the patella in nine, and the clavicle in one. The most common site for nonunion in the shaft of the femur was in the middle third; in the tibia, the lower one third; in the humerus it was about evenly divided between the middle and lower third; in the radius and ulna combined, the site was most common in the middle third. In the radius alone it was most common in the lower third, and in the ulna alone, in the middle third. The bones named in the order in which the best results were obtained are the patella, the radius, the ulna, the tibia, the humerus, the shaft of the femur, and the neck of the femur. The massive autogenous graft is preferred, and firm internal fixation of the graft to the fragments is also essential. The fact that occasionally success follows the use of metal plates, bone screws, beef-bone plates, and so forth, does not establish the fact that they are to be preferred to the bone graft. In a large series of cases here is ample proof of their inadequacy. Adequate external fixation must also be provided.

TO CONTROL THE ODOR FROM CANCER

Spray with cinnamon water. This gives marked relief. Also carbolic acid injections are recommended, one or two syringes of a 2 to 4 per cent solution.—Med. Insurance and Practical Med. and Surg.

HOARSENESS

Robbins, in Ellingwood's Therapeutist, states in sudden loss of the voice or sudden hoarseness, dissolve a piece of borax the size of a pea in the mouth. It will give almost instant relief.

PITUITARY SOLUTION IN HERPES ZOSTER

Vendel (Ugeskr f. Laeger) considers pituitary solution (solution of hypophysis) remarkably efficacious in cutting short herpes zoster. He had treated nine cases with subcutaneous injections of 1 c.c. The course was quite different from the usual one, which, as is known, is prolonged and painful. He says that within a few hours the pain almost completely disappears and in a few days the eruption vanishes. As the injections are liable to cause slight malaise the patient should be kept in the recumbent position for about fifteen minutes after each dose.—Urologic and Cutaneous Review.

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Annual Meeting, Omaha May 13, 14, 15

THE ANNUAL MEETING, MAY 13, 14, 15.

The programme for this meeting will be in your hands in a few days, and a synopsis of it will be found in another part of this Journal. The Committee, in the opinion of the writer, has put together an excellent list of papers and addresses. In fact one which it will pay everyone to hear and participate.

The Entertainment Committee also has arranged for your good time during the hours of recreation. Doctor, make up your mind to attend this meeting. The State Association has been growing for several years and we want it to continue to grow. This can only be done well by having every member do his part to help the Association, and you can help by attending and by being active during the meeting. Attending the meeting of your Association brings you into closer relationship with your fellow members and makes you better friends. It keeps you in touch with medical progress, and will give you a larger perspective in your work. You get a better opinion of your doctor friends and it improves your standing in your community. In fact doctor you owe it to yourself and to your Association to be present. Therefore, let me urge you to be present and help this meeting be the biggest and best one that we have ever held.

R. B. Adams, Secretary-Treasurer.

NEBRASKA SECTION MEETING, CLINICAL CONGRESS. A. C. S.

The Nebraska Section Meeting of the Clinical Congress of the American College of Surgeons at Omaha, February 18-19 was a rare treat to those who participated. Your editor has attended a good many medico-surgical meetings throughout the United States and some very good ones, but he does not recall one that held the undivided attention of those in attendance as did this one.

The central idea of the meeting was Dry Clinics, featured both forenoons by Fellows of the American College of Surgeons resident in Nebraska, mostly Omahans, although Lincoln and Tekamah also were represented on the program. Twenty-four fellows participated in the presentation of the clinics and the subjects varied from actinomycosis to Kummel's disease, from carcinoma of the antrum to spontaneous version and fractures.

The scientific program of six numbers the last afternoon was of the highest order.

The hospital conference the first afternoon attracted a full house which bespeaks the interest of the profession in hospital standardization.

The community health meeting at the auditorium of the Technical High School Monday evening was attended by 2,000 people. Addresses were given by Dr. A. J. Ochsner, president of the American College of Surgeons; Dr. Malcom T. MacEachron and Allan D. Craig, associate directors of the A. C. S.; Rev. C. B. Moulinier, president of the Catholic Hospital Association and others.

At a fellowship dinner the first evening Dr. Morris Nielsen, president Nebraska State Medical Association, spoke on behalf of the Nebraska profession.

Organization was effected of the Nebraska Section, American College of Surgeons, with Dr. A. F. Jonas, chairman, Dr. J. S. Welsh, vice chairman, Dr. W. L. Shearer, secretary, Drs. C. Allenberger, P. H. Salter, F. B. Hollenbeck, J. M. Emmert, Delmer Davis, and H. W. Orr, councilors.

Two hundred doctors attended the meeting.

This number of the Journal is devoted to the publication of the Dry Clinics of the meeting, publication of which has been delayed in order that all the material might be collected.

Through no fault of the editor several of the clinical reports given at the meeting are missing from this number.

REST IN TUBERCULOSIS

The varied and difficult problems involved in the study of immunity and infection in tuberculosis remain, for the most part, without entirely satisfactory solutions. Intensive laboratory research and animal experimentation have resulted in quite divergent views relating to the fundamental principles underlying the subject of immunology of the disease, which even to the present time are far from being entirely reconciled. Relating to the problems of infection, which concern directly the teaching of clinical tuberculosis and are of practical interest to all, there is likewise a decided divergence of opinion among the most advanced workers and thinkers. Even the generally accepted views of recent years that practically universal childhood infection is the source or origin of all cases of clinical pulmonary disease in adult life, reinfection from the outside (exogenic) not being possible, is not accepted in this country by such men as Lawran-son Brown of Saranac and Opie of St. Louis. We are justified in believing, however, that the facts relative to infection and immunity in the disease will ultimately be determined. And it would seem that having been properly correlated and satisfactorily established they may, in our attempts to reduce the prevalence of the disease, provide us with a vision much superior to that which we now have.

Somewhat, at least, in contradistinction to the situation which exists with reference to the attempted solution of the more theoretical problems of tuberculosis, has been the consistent development of the principle of the treatment of the disease by means of absolute rest.

Of all the innumerable therapeutic "specif-ics," which have been "discovered," whether they may have been based upon supposedly scientific reasoning, or having sprung from pure absurdity, whether having been cautiously and conservatively announced to the medical world, or ridiculously and shamelessly exploited directly upon the public, it appears that none has stood the test of time, gained the respect of the intelligent in the profession of medicine, or materially aided in the recovery of a single victim of the disease. There are some who would make an exception in the matter of tuberculin therapy.

Gradually and slowly, however, progressively and surely, the idea of the necessity

for a prolonged regime of physical and mental inactivity, in order that the body may overcome the disease and recover from it, has gained ground without interruption and with no opposition.

That recovery from the disease with practical restoration to health, by the carrying out of the principles of absolute rest, as applied under intelligent supervision over a sufficient length of time, occurs in many cases is today not questioned. Not all cases can be or ever will be so arrested, but undoubtedly many more could be. The greatest obstacle which prevails is the financial inability of the patient. The pronounced obstacle which directly concerns us as physicians, collectively and individually, is a certain lack of a full appreciation of the necessity for persistence and attention to detail, of the length of time required and of what can actually be accomplished thereby.

A man known prominently in the world of professional athletics a few years ago broke down completely from pulmonary tuberculosis. He spent almost two years in bed, but today he is back in the active management of the sport from which his illness had compelled him to retire. The intelligent and persistent methods of specialized sanatoria should be imitated in the care of those whose financial status denies them the opportunity of a sanatorium regime.

Trudeau noted an abatement of his own symptoms when he refrained from bodily activity. He fished lazily from a boat on the days when he had fever. From the time when he caused to be erected on a "fox runway" in the remoteness of the Adirondacks the first little cottage in this country to be used in the treatment of tuberculosis, the principles of therapeutic rest have made decided progress. From something to be indulged in moderately, so to speak, as an aid to the beneficial influence of a curative climate, it has become a matter upon which the entire attention must be centered; the main reliance in the treatment, to which all other measures are but adjuncts.

Logically, in addition to general bodily rest and supplementing it, the idea of localized rest of inactivity as applying to the affected lung or invaded area thereof has developed. This is now accomplished by a variety of means, the purpose being to restrict the movements of the diseased lung as much as possible. These include postural rest, which consists in cases of unilateral

disease, of requiring the patient to spend as much of the time as possible lying on the affected side; induced or therapeutic pneumothorax; compression of the affected lung in suitable cases of one-sided disease by the introduction of nitrogen gas or air into the pleural cavity. Shallow breathing of the diaphragmatic or abdominal type, in order that the upper portions of the lungs where early disease is most common, may be maintained as quiet as possible. Voluntarily reducing the respiratory rate, together with the restricted type of diaphragmatic breathing for varying periods, which patients may accomplish without discomfort. Mechanical means have been employed and most recently a jacket applied to the chest externally which may be inflated over the side of the diseased lung sufficient to restrict the respiratory movement of that side.

The study of the pathological physiology of early lung lesions is developing at this time, pointing to observations which confirm the fixed belief in the value of "utmost" rest and offer satisfactory proof and explanation of the rationale of the various measures employed. Barlow's article, (*Journal of American Medical Association*, December 8), on "Selective Collapse" which is of such a nature, appears logical and convincing.

—John F. Allen.

BLOOD PRESSURE

The universal use of the blood pressure apparatus in life insurance examinations has contributed more to stimulate the layman's interest in his health than any other medical procedure. The terms "high" or "low blood pressure" have come to signify ill health or short life, whatever the cause of the condition.

High blood pressure is an expression of the body's effort to compensate for disturbed physiology. As to the causes of this disturbance it will be enough to say that although the individual survives his various accidents and infections, he is always the tenant of the same structure which was the recipient of these injuries. Each storm leaves some vestige of its passage. For academic reasons it may be important to determine whether the kidneys, the blood vessels, or the glands have borne the brunt of these repeated blows, but in practice, whatever the etiology, the result is high blood pressure. The variation in the pressure ranges is small when one considers the nu-

merous combinations of organs that can be affected by this serious process of living. We often fail to take into consideration the variation in the mechanical power of the heart to maintain a suitable blood pressure. It is reasonable to think of a high blood pressure habit. The normal individual in the course of his day's work must be as much on his toes to meet competition and changing conditions in the business world as the athlete in the games requiring muscular exertion. The vasomotor system becomes so accustomed to the repeated daily demand for increased pressure that there comes a time when it never returns to the normal level week in and week out. Handicap the body of this individual with chronic infections, insufficient elimination, lack of nutrition, domestic worry, financial strain and increasing age, and high blood pressure becomes a necessity to the physiology of the individual. Any one of the above factors may well be the "last straw on the camel's back"—the removal of which is accompanied by remarkable results. The constipation or the infected tonsils, which were handled without trouble at the age of twenty, become a serious burden at forty. The endocrine system in perfect balance at the early age, in spite of serious infections, loses its equilibrium in the middle life, apparently for the most insignificant reasons, because of the early insults. There is no doubt that a great number of the symptoms in women at middle life, ascribed to the menopause, have no endocrine basis, but are the sum of forty-five years of acute and chronic infections. The high blood pressures so common at this period of a woman's life would apparently fall into this category as attention to the infections are often followed by lower pressures.

High blood pressure does not carry with it a grave prognosis. The writer has in mind now a good friend with a blood pressure of 320 mm. some eleven years ago. He is still alive and well. It is a matter of experience that where such patients follow a moderate way of living they often outlive the individual with normal pressure, because they take no chances with the minor infections, etc.

To sum up—the high pressure case must be relieved of every possible source of demonstrated irritation, whether mental or physical, and then most carefully instructed as how to live within the limits of endurance of a subnormal body.

Low blood pressure, on the other hand, is

the result of the failure of the body to compensate properly in terms of its physiology. It is the low blood pressure with symptoms which excites our interest. This condition, as seen in our daily work, occurs in three classes of patients: The first, the subnormal young woman who is not able to keep up with the requirements of modern life; the second, those patients who have had severe acute infections, particularly influenza, etc.; the third, the patients with tuberculosis, osteomyelitis, lung abscesses, encephalitis, endocarditis, etc.

Sewall, of Denver, believes that in the absence of known focal infection, occult tuberculosis is responsible for much of the hypotension, but as Hoxie comments, it is a question whether the tuberculosis results from the general condition, or vice versa.

A theory worthy of consideration, especially in the first and third groups above, is that which deals with heart atrophy. It is easy to think of heart unable to keep step with body growths, or suffering so much from malnutrition in long drawn-out disease that a normal blood pressure cannot be maintained.

What is a subnormal blood pressure for the adult? Many patients and physicians have been alarmed by pressures around 110. Experience seems to bear us out when we say that any systolic pressure over 100 mm. at any age, is cause for congratulation rather than fear. The valves and "piping" of a low pressure system wear immeasurably longer than those of a high pressure system.

The second group of low pressures are those resulting from acute infections. As Hoxie remarks, it is important to know what was the patient's blood pressure when he was normal. If it was normal then we must think of endocrine exhaustion, not necessarily adrenal, and of myocardial weakness. If it is the latter, digitalis is an efficient and prompt remedy; if it is the former, the problem is more complex. More often it means the existence of focus of infection hitherto unsuspected and probably not playing a part until the acute infection robs the patient of his normal resistance. Organotherapy should always be used, but the doses of the drugs must be ample, especially when administered orally. Rest in bed, hypernutrition and tonics have still a prominent position in the treatment of low blood pressure.

—Francis W. Heagey.

ETHYLENE—THE NEW ANAESTHETIC

The summer of 1923 brought a revival of interest in Ethylene which is hailed as a new anaesthetic. It is not really new, since in 1864 the physiologist "Herman" demonstrated on himself the anaesthetic properties of Ethylene and its effect on animals was studied in 1876 by Eulenberg, and in 1885 by Lussen. However, to Luckhardt and Carter belong the credit of extending the experimental work with Ethylene to the degree that clinical application appeared warranted and it was through the inspiration of their efforts that the Surgical staff of the Presbyterian Hospital in Chicago applied it in major surgery.

The extensive work of Luckhardt and Carter on animals has shown that Ethylene in the same concentrations induces anaesthesia in approximately one-half the time required for nitrous oxide. The stage of excitement is but of brief duration. It has little effect on the pulse or blood pressure. During anaesthesia the rate and depth of respiration and the color are practically the only observations required to maintain a satisfactory surgical anaesthesia. With full regular breathing, normal color of the skin and muscular relaxation the patient is in satisfactory condition. The cyanosis that results from too deep anaesthesia is of a peculiar gray type rather than blue. The quantity of Ethylene necessary for general anaesthesia has been determined. Of 90 per cent Ethylene and 10 per cent oxygen seventeen liters will be required for thirty minutes of surgical anaesthesia.

Most institutions that have adopted Ethylene as a routine or frequent anaesthetic have utilized a nitrous oxide oxygen machine for its administration. The persistence of the odor of Ethylene in the machine obviates its use interchangeably for nitrous oxide or Ethylene.

At this time it may be said that Ethylene has been used in a sufficiently large number of major surgical cases to warrant acceptable opinions regarding it. The best judgment as to its anaesthetic properties rests with the surgical staff of the Presbyterian Hospital in Chicago where several hundred major surgical operations have been performed under it. The consensus of opinion of the surgeons as expressed verbally and in reports is that Ethylene is a "good" or "very satisfactory" general anaesthetic. Anaesthesia is induced more quickly without

sensation of asphyxia and generally unaccompanied by nausea, vomiting or a stage of excitement. The anaesthetists reports indicate that anaesthesia may be maintained without asphyxia or dyspnoea and with complete muscular relaxation. One of the anaesthetists in the Presbyterian Hospital referred to it verbally as the fool-proof anaesthetic.

The evidence warrants the belief that Ethylene is a relatively safe anaesthetic lacking some of the disagreeable features of either nitrous oxide or ether, but the statement that it is a fool-proof anaesthetic should not be taken too literally and was not so intended by the very capable anaesthetist who made the remark. Asphyxia will result unless a sufficient per cent of oxygen is administered simultaneously. No doubt the success of Ethylene as a general anaesthetic will be best preserved if its use is very cautiously extended.

—Clarence Emerson, (Lincoln).

THE COMPLEXITY OF THE HAY FEVER PROBLEM

That the hay fever problem is not as simple as we have been lead to believe is shown by data collected from one clinic last season. These figures show that it is not one, but several plant species which may be affecting the patient at the same time. "Three-fourths of those tested during this season reacted to the pollen of four or more species, while one-fourth responded to but three pollens or less, five alone being sensitive to a single one." If only one of these plants is in bloom within a block or two of the patient's home, then he is probably suffering from that pollen alone. However, during periods of high wind or when the patient moves about the town, if he comes into a region where the other plants are blooming, he will get the cumulative effect of the several pollens. Desensitization for one of the pollens, would not give the patient relief and it is only when the treatment for the several pollens is given, that relief is obtained.

The advantages of preseasonal treatment for hay fever were shown by the fact that this treatment yielded an average relief of 90% in contrast to 50% for seasonal treatment, although this also gave complete relief in some cases.

"Daily analyses of the pollen content of the air were made at Colorado Springs during this season whenever the weather conditions permitted, by means of an ane-

nometer, which measured the air passing over pollen plates as an automobile was driven through the district to be tested. This preliminary study warrants the following conclusions:

(1) Rain clears the atmosphere of pollen grains.

(2) The amount of pollen in the air varies with the velocity of the wind.

(3) The pollen in the air reaches a maximum within 1-3 hours after the anthers have shed. This maximum usually falls between 8-11 A. M., but is affected to some extent by air currents.

"The cutting of weeds of vacant lots, streets and alleys, will do much toward preventing the development of hay fever. However, it has been found that mowing these weeds just before the plants begin to bloom is not sufficient to prevent the flowering, but that successive mowings are necessary to prevent regeneration sufficient to prolong the flowering period, although the total pollen production is greatly decreased."

—Frances L. Long, Ph. D.

(Tucson, Ariz.)

THYROIDECTOMY: FURTHER MODIFICATION IN TECHNIC

C. A. Roeder, Omaha (Journal A. M. A., Feb. 16, 1924), carries the Kocher incision through the deep fascia, which necessitates a ligation of the anterior jugular veins which lie in this layer. The flap thereby contains one more layer and is easily reflected by sharply dissecting the fascia from the muscles beneath. The next step is the exposure of the lobe to be resected, which is done by incising, directly over the lobe, through the bodies of the sternohyoid and sternothyroid muscles, one inch or more lateral to the midline. This lateral incision through the bodies of the muscles gives ample exposure for removing the isthmus and the superior lobe, even if the latter lies extremely high or behind the trachea. The external border of the gland is easily exposed by outward retraction of these split muscles, and as the resection is carried toward the midline the isthmus is easily exposed by retracting the inner border of this split muscle incision. If the opposite lobe requires resection, a second muscle splitting incision is carried through the bodies of the sternohyoid and sternothyroid muscles on the opposite side, the same distance from the midline. When drainage is necessary, small one-eighth inch rubber tubes are brought out through these lateral muscle

split incisions and if removed within seventy-two hours they do not increase the line of the scar in the skin. Following the lobe resection, the split incision through the lateral muscles is loosely closed in two layers with 00 plain catgut, which allows these muscles more readily to return to their independent action, and in turn helps to hasten the normal extension of the neck. Exacting hemostasis is carried out on the inferior surface of the flap before the line of incision is closed with 0 plain gut, which passes through the deep fascia and platysma muscle. The flap heals readily with no induration beneath, and the patient is not forced to hold the neck flexed for a week or two as when the muscles are divided, extension being carried out freely within a few days. The thicker flap and undivided muscles also leave the platysma muscle sliding freely over the deep fascia as it normally does, preventing the wrinkled skin over the brawny induration. Following this technic the appearance of the neck is far more satisfactory than when the Kocher flap, the midline separation and transverse section of the deep muscles, together with midline drainage, are used.

ANNUAL SESSION OF THE A. M. A., CHICAGO, JUNE 9-13.

Without a doubt many Nebraska physicians will be interested in the annual session of the American Medical Association, June 9-13, in Chicago. All of the sessions will be held on the Municipal Pier, one mile out on the lake and all the exhibits will be housed on the Pier.

Railroad rates of one and one-half fare will be granted on the certificate plan.

It is urged that those who expect to attend get hotel reservations early, for the demand for accommodations will be great.

EDITORIAL PARAGRAPHS

The membership of the American College of Surgeons consists of 6,254 Fellows.

The origin of coffee dates back to the 12th or 13th century when it was first heard of in Arabia.

Let every doctor boost for good roads—no class of men are more directly interested. Do you realize how little personal effort it takes to get a reputation as a "good roads man?"

At the Lincoln Highway convention re-

cently, a gentleman suggested a new and novel sign for railroad crossings: "Railroad Crossing—Dangerous Drivers Beware!"

Now comes the report that Dr. Walter H. Eddy, of Columbia university has isolated and identified the vitamin. Heretofore we have known vitamins by what they do rather than by what they are. It is said to be an organic chemical compound composed of carbon, hydrogen, oxygen and nitrogen.

A magazine writer says the chances are four to one that a murderer will never be apprehended, ten to one that he will never be convicted and twenty to one that he will not be executed.

Any doctor with the requisite amount of hemoglobin who willingly remains away from the annual meeting of the state medical association meeting will hate himself for the ensuing twelve months.

"Medicine Watches, Osteopathy Works—The greatest step in the doctor's evolution." —Osteopathic Health. H-m, h-m!

The Banting Research Foundation has been created: (a) to provide further funds for the support of the Banting and Best Chairs of Medical Research at the University of Toronto and (b) to establish a fund for the adequate financial support of such scientific workers as may have proposed definite problems of medical research, and for whom funds are not otherwise available. Such assistance may be given to persons in the University of Toronto or elsewhere. The Trustees propose to make an appeal to the public for funds in the immediate future. Subscriptions to the Fund will be welcome at any time.

An increasing number of Nebraska physicians are taking advanced postgraduate courses, which augurs well for the future of the profession.

In the three years preceding the introduction of insulin the mortality from diabetes among industrial workers had increased 28%; in 1923 the mortality decreased 6.4%. This tells the story of insulin briefly and forcibly.

Omaha hospitals cared for 27,803 patients during 1923, of which number 16,500 were residents and 11,303 non-residents.

Now it appears that with all our efforts

to get anti-alien laws on our statute books we have omitted enactment of a law preventing alien physicians from obtaining licenses in Nebraska. Teachers and nurses must be citizens, but alien doctors are not barred.

It is said that the first pound of insulin ever produced cost more than a million dollars and ten years of constant effort.

The death at Hamilton, Bermuda, of Professor Jacques Loeb, the great physiologist, head of the division of general physiology at the Rockefeller Institute for Medical Research, is announced. He was a voluminous author. Perhaps his most noted work is that dealing with artificial parthenogenesis and fertilization.

PROGRAM, NEBRASKA STATE MEDICAL ASSOCIATION, ANNUAL MEETING, MAY
13-15, FONTANELLE HOTEL,
OMAHA

SCIENTIFIC PROGRAM

Tuesday, May 13th, 8:30 A. M.

1. The X-Ray as an Aid in Diagnosis of Diseases of the Lung—James F. Kelley, M. D., Omaha.
2. Cooperative Medicine from the Patient's Standpoint—H. M. Hepperlen, M. D., Beatrice.
3. Experimental Nephritis—George W. Covey, M. D., Lincoln.
4. Complications of Acute Mastoiditis—R. D. Martin, M. D., Hastings.
5. Duodenitis—C. A. Roeder, M. D., Omaha.
6. Infant Feeding—Homer Davis, M. D., Genoa.

Tuesday, May 13th, 2:00 P. M.

Opening Exercises—

Call to order. President Morris Nielson.
Invocation. Rev. Lloyd B. Holsapple, Omaha.
Address of Welcome. Hon. J. C. Dahlman, Mayor of Omaha.

Response. Dr. Lucien Stark, Hartington.

1. An Outbreak of Botulism in Western Nebraska with Important Findings—A. L. Cooper, M. D., Morrill.
2. Parkinsonian Syndromes—H. A. Wigton, M. D., Omaha.
3. Postoperative Care—L. M. Stearns, M. D., Kearney.
4. Hospital Standardization in its Application—Edmund G. Zimmerer, M. D., Lincoln.
5. Otic Sinus Thrombosis—A. G. Lueschen, M. D., Columbus.
6. Roentgen Findings in Mediastinal Diseases—C. H. Ballard, M. D., Omaha.

Wednesday, May 14th, 8:00 A. M.

CLINICS AT THE FOLLOWING HOSPITALS:

Clarkson Memorial Hospital
Immanuel Hospital
Lord Lister Hospital
Methodist Hospital
Presbyterian Hospital
Radium Hospital
St. Joseph's Hospital
University Hospital
Swedish Mission Hospital
Wise Memorial Hospital

Wednesday, May 14th, 2:00 P. M.

1. Address by Chairman of Medical Section—John Buis, M. D., Pender.
2. Blood Chemistry as an Aid to the General Practitioner—Ralph Webster, M. D., Chicago, Ill.
3. Perineal Prostatectomy Under Sacral Anesthesia Using Distendable Rubber Bag for Haemostasis—Edwin Davis, M. D., Omaha.
4. Constipation in Infants—E. R. Hays, M. D., Falls City.
5. Radiographic Findings in the Right Upper Quadrant of Abdomen—A. P. Overgaard, M. D., Omaha.
6. Multiple Fibroids with Complications—A. L. Kee, M. D., Cambridge.

Thursday, May 15th, 9:00 A. M.

1. Hemorrhage of the Pregnant Uterus—Palmer Findley, M. D., Omaha.
2. Bone Infections—H. R. Miner, M. D., Falls City.
3. Sympathetic and Parasympathetic Nervous System with Special Reference to Referred Pain from the Nose and Ear—H. B. Lemere, M. D., Omaha.
4. The Diagnosis of Chronic Gallbladder Disease—J. E. Meyer, M. D., Columbus.
5. Treatment of Hay Fever by Pollen Inoculation—A. H. Webb, M. D., Lincoln.
6. Heredity—O. P. Moore, M. D., York.
7. Postoperative Parotitis—Chas. F. Heider, M. D., Sutherland.

Thursday, May 15th, 1:30 P. M.

1. Address by Chairman of Surgical Section—K. S. J. Hohlen, M. D., Lincoln.
2. The Non-Operative Treatment of Goitre—Edward H. Ochsner, M. D., Chicago, Ill.
3. Teeth in Congenital Syphilis—Harold Gifford, M. D., Omaha.
4. Acute Head Injuries—J. W. Duncan, M. D., Omaha.
5. Intracranial Pressure—B. F. Williams, M. D., Lincoln.
6. Esophageal Diverticulum—W. J. Arrasmith, M. D., Grand Island.
7. The Treatment of the Patient with an Anorectal Complaint—L. E. Moon, M. D., Omaha.

CONVENTION ANNOUNCEMENTS

County Society Secretaries

A conference of County Society Secretaries will be held on Tuesday at 5:00 P. M., when there will be short talks by several of the secretaries and an open discussion regarding matters of interest to all. Dinner will be served following this meeting. It is hoped all secretaries will plan to attend this get-together.

State Society of Medical Women

The State Society of Medical Women will have a dinner and a meeting at the Athletic Club, on Tuesday evening, May 13.

The Committee on Entertainment, in arranging the social features for the convention, feels that one of the greatest benefits derived from the medical meeting is the personal interchange of experience in individual problems and it is the hope to give adequate opportunity for these smaller group discussions. Tuesday evening has been left open for group dinners and theatre parties.

THANK YOU, SIR: WE SWELL WITH PRIDE!

The Nebraska State Medical Journal is a very fine one, much better than the New York State Journal of Medicine with its 16,000 in the profession. So all credit to the Editor. —K. C.

WHAT IF THE COMMISSIONER WERE WRONG?

The following letter sent to this journal for publication refers to an article published in the Nebraska State Medical Journal, page 54, February number:

Dr. Czar C. Johnson,
Lincoln, Nebr.

My Dear Doctor:

My attention has been called to a statement in your article entitled "Compensable Injuries Under the Workmen's Compensation Act", under the caption "Professional Relational Responsibilities". You say: "The law prescribes that the injured individual may select his own physician but in that event the employer is given the right to employ a physician to examine the injured."

The injured is only authorized to select his own physician in case of major operation.

Yours very truly,

L. B. Frye,
Commissioner of Labor.

THE NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners will give examinations as follows:

Part I, June 19th, 20th, 21st, 1924.

Part II, June 20th, 21st, 1924.

All applications for these examinations must be made on or before May 15th, 1924.

Further information may be obtained from the Secretary, Dr. J. S. Rodman, 1310 Medical Arts Building, Philadelphia, Pa.

SUMMARY OF REPORT OF UNIVERSITY HOSPITAL FOR THE CALENDAR YEAR 1923.

		Gain	Decrease
Hospital Patients	2698	287	
Births	261	1	
Surgical Operations (not including obstetrical cases)	1680	199	
Deaths	99		24
Autopsies (Hospital)	69—70%	7%	8
(Out-Patient)	3		
Total Autopsies	72		

It will be readily noted that in comparison with the number of beds available in the University Hospital (140), the number of cases received and cared for during the year is unusually large. This is due in a large measure to the effort made by the Hospital Staff to discharge cases as soon as the resources of the Hospital have been exhausted or as soon as hospital care is no longer needed. It has been necessary, unfortunately, to decline a fairly large number of applicants for admission because of lack of room, altho in practically no instance has an emergency case been refused.

OUT-PATIENT SERVICE

Visits—Year 1921—20,130

Year 1922—22,801

Year 1923—22,391

Individual Patients 5,771

Through the Social Service Department, 193 persons were either referred to private physicians or refused treatment. In each case, investigation disclosed the ability of the patient to pay physician's fees. The Social Service Department made a total of 462 visits to the homes of patients for the purpose of investigating the economic status, obtaining information as to home environment and following up prescribed treatment.

THE SOCIETIES

The program of the Omaha-Douglas County Medical Society meeting, March 25, 1924 consisted of three papers: Brain Injuries, Dr. J. W. Duncan; Neuromuscular System, Dr. E. C. Henry; and Brain Tumors, Dr. J. J. Keegan. The points covered in Dr. Duncan's excellent paper of 30 minutes' time cannot be enumerated here. It was thoroughly discussed by Drs. Wigton, Simanek, Lemere and Schwab.

Dr. Henry gave a generalized description of the neuromuscular system, criticizing some of the methods of treatment now in vogue for the care of such cases. Dr. H. F. Johnson related his experience with physiotherapy in the care of these patients with neuromuscular injuries.

Dr. Keegan used illustrative slides and presented museum specimens of the different types of brain tumors he described. In addition he presented a patient who had been operated upon for a pituitary tumor. Dr. Uren laid emphasis on the importance of the Baramy test in the localization of brain tumors. Dr. Banister thought more importance should be given the interpretation of choked disc, which he considered present in 80% of brain tumor cases. He also discussed the various ocular paralysis especially of the 6th and 3rd nerves occurring with brain tumors.

At the meeting on April 8, it was moved, seconded and carried that the Omaha-Douglas County Medical society stand behind the health week program to be given by one of the local stores the first week in May, and at a special Council meeting on April 14, the sanction of the Society was given to those members who were asked to give lectures during this week.

The program of the evening consisted of two papers. First: The Economics of Medicine by Dr. A. D. Dunn; and second, The Fundamentals of Health Education in the Schools by Dr. E. T. Manning. Both papers were very heartily received and brought forth considerable discussion.

Dr. W. L. Ross Jr., moved that Dr. Dunn's paper be offered to the public press to be printed in full, omitting the author's name. The question of giving the right kind of ethical publicity concerning medical matters to the newspapers was suggested by Dr. Frank Conlin and discussed favorably by Drs. Bliss, Christie, Lord and Bushman.

Dr. Floyd Clarke suggested that the Committee on Public Affairs function in this capacity and institute a clipping bureau to get the right kind of news into the papers on this health problem complex. Dr. Wherry suggested we should investigate what was being accomplished in other cities, especially Minneapolis. Dr. Crummer was somewhat pessimistic concerning this educative campaign, holding that only about 5 per cent of the public could be taught at any rate. Dr. Bushman insisted that at least one editor here in Omaha had assured him that the right sort of propaganda for bettering health con-

ditions would be printed if the material was simply furnished by the organized medical profession.

Dr. Lemere moved that the secretary be instructed to inform the Committee on Public Affairs that both Dr. Dunn's paper and Dr. Manning's contribution be placed in the public press with the sanction of the Omaha-Douglas County Medical society. This motion was seconded and carried. Dr. Christie moved that three additional members be appointed on the Committee on Public Affairs to give added life and zest to this body. So that the committee as it now stands is composed of Dr. J. M. Banister, chairman, Drs. I. S. Cutter, John F. Allen, Frank M. Conlin, L. B. Bushman and G. W. Dishong. This motion was seconded and carried. It was the opinion of the Society that such a venture would tend to benefit the whole community and should be sponsored by the organized medical profession.

Before the Gage County Medical Society April 1, Dr. C. J. Reilly read a paper on the business side of the practice of medicine. (Every county society should devote one meeting each year to the discussion of this topic.—Editor)

The York County Medical Society tendered a farewell banquet to Dr. George F. Shidler, on his departure for Torrance, Calif. After dinner speeches were made by members of the local profession. Dr. Shidler had been prominent in the York county medical society for many years.

Report of the meeting of the Lancaster County Medical Society, March 15, 1924.

Dr. B. F. Bailey read a paper entitled "Psychiatry in its Close Affiliation with General Medicine". The essayist considered that each psycho-neurosis is accompanied by metabolic changes. Also that inheritance plays a very minor part in the cause of the condition. He considered infection, general surroundings and habits of living; each had its part to assist in the development of various psychoses.

Dr. A. R. Mitchell in discussing Dr. Bailey's paper laid great stress on the condition of the subconscious elements and their influence. These he considered depended greatly on the environment, personal relief or benefit the patient might derive from developing this condition. He considered the treatment must be directed to the relief of the individual case.

Dr. H. J. Lehnhoff considered the repeating of similar shocks to the nervous mechanism a contributing cause.

Dr. I. C. Philbrick stated that she considered the habits of home and general surroundings were the predominating factors in causing psychic conditions.

Dr. A. I. McKinnon insisted that the nervous system was only a part of the general body mechanism and that the sick body and the sick nervous system worked hand in hand.

Dr. Bailey in closing stated he was gradually becoming more convinced that hereditary played a very minor part in the cause of psychic condition.

Dr. P. H. Bartholomew presented a paper, his subject being, 'A Much Neglected Disease'. He spoke of the responsibility of the physician in treating and combating gonorrhea. Dr. Bartholomew's paper will be published in full in the Journal.

Dr. J. J. Snipes, in discussing Dr. Bartholomew's paper, urged careful follow-up treatment and proper advice to the patient. Dr. Snipes spoke especially of the necessity of proper diet, clean habits

with proper medication. Dr. McKinnon urged proper drainage of infected pus tubes instead of removal.

Dr. K. S. J. Hohlen reported favorable results by drainage of the epididymis and the use of external irrigation.

Dr. R. Warner suggested much unnecessary suffering is caused by not warning the family to protect the children.

Dr. Bartholomew, in closing the discussion, urged cooperation between patient and physician that the physician put forth his best efforts and if he is to treat venereal diseases to so prepare himself that he can be of as much benefit as possible to the patient. He very thoroughly condemned the policy of neglecting the case or treating it in a haphazard, indifferent and neglectful way.

At the meeting, April 5, the Society entertained as its guests, Dr. J. M. Hall of Denver, Colo., and Dr. F. A. Long, Editor of The Nebraska State Medical Journal. Dr. Hall was the speaker of the evening and chose as his subject, "The Relation of the Various Digestive Diseases." First he ruled out all abdominal conditions not related to the digestive tract. He stressed the fact that there are a great many medical novelists who write glibly of symptomatology of the various diseases without being able to correlate the same. Then taking up the stomach and intestines, he spoke about the various disturbances which may arise from them, laying particular stress upon ulcer and appendicitis emphasizing the relation of these to each other. He dwelt on the x-ray in clearing up the diagnosis between gastric ulcer and appendicitis, blamed obscure cases of appendicitis for a good many ills attributed to other causes. Poor appendiceal surgery is to blame for some of the cases in which no relief follows operation, part of the appendix being left or improper work being done on the surrounding structures. Altogether Dr. Hall's talk was one of the most lucid discussions of the symptomatology of digestive disturbances ever presented in Lincoln. The meeting was attended by a number of physicians from near-by towns.

—D. D. Sanderson and
R. B. Adams.

The Sixth Councilor District Medical Society spring meeting was held at Wahoo, April 14. The following program was enjoyed by all present:

"Goiter Surgery", C. A. Roeder, Omaha; "Fixation as a Factor in the Post-Operative Care in Certain Surgical Conditions", J. E. M. Thompson, Lincoln; "External Inflammations of the Eye", James M. Patton, Omaha; "Bovine Tuberculosis and Its Relation to Human Health", L. van Es, Lincoln, Univ. Neb. Agricultural College; Address, Morris Nelson, Blair, Pres. State Med. Assn.; Address, R. B. Adams, Lincoln, Sec.-Treas. State Med. Assn.; "The University Hospital", Irving S. Cutter, Omaha, Dean University Nebraska Med. Col.; "Cancer of the Colon and Rectum", B. B. Davis, Omaha.

All of the above papers were of an exceptionally good quality and particularly the one by Dr. L. van Es, Animal Pathologist at The University of Nebraska. His title was, "The Host Relations of the Tubercle Baccillus." He used many charts to help him demonstrate how the Human, Bovine, and Avian forms were isolated. Also, by his discussion and these charts, he showed the pathogenicity of the different forms in different animals, especially

man, showing that bovine tuberculosis is transferable to the human, especially to the child under 16. The lesions produced by the different varieties when they infect man were described. Bovine tuberculosis seldom takes the pulmonary form but is usually glandular, in particular, cervical and mesenteric.

Dr. van Es said that the work for the eradication of bovine tuberculosis must go on parallel with the work for eradication of the human type. Nebraska has a low incidence of tuberculosis in cattle, about 4 or 5 per cent, but this will increase and double itself every fifteen years if allowed to do so. We must not permit such a condition to arise as exists in Europe, where 95% of the cattle are tuberculous and they have to be used because there are not enough healthy cattle to supply the milk necessary.

The meeting was well attended. Dinner was served by the ladies of Wahoo. Dr. Frank Tornholm, councillor of this district was in charge.

—R. B. Adams.

HUMAN INTEREST TALES

Dr. D. D. Stonecypher, has moved from Peru to Auburn.

Dr. Edwin Nichols has moved from Morrill to Scottsbluff.

Dr. Max Emmert, Omaha, has moved into 446 Aquilla Court.

Royal and Brunswick, Nebr., are reported without physicians.

Dr. Rudolph Griess, has moved his office from Sutton to Harvard.

Dr. R. J. Murdock, Blair, was elected mayor at the spring election.

The new West Nebraska Hospital at Scottsbluff was dedicated Sunday, April 13th.

Dr. Louis E. Moon, Omaha, announces the removal of his office to 440 Aquilla Court.

Dr. S. P. Cresap, Nebraska City, was reelected president of the Chamber of Commerce.

Dr. H. M. McClanahan, Omaha, returned the first of April from a trip to the Mediterranean.

The marriage of Dr. Perry Allerton of Tilden, and Eileen Stewart, Elgin, Ill., April 5, is announced.

The profession sympathizes with Dr. J. W. Neslund, Cozad, in the untimely loss of his wife, recently.

Dr. R. P. Hoxey, Red Cloud, has accepted a position in the Beatrice Institution for the Feeble Minded.

Dr. H. O. Bell, York, has returned from post-graduate work in internal medicine, taken in Chicago.

Quite a number of Omaha medical men are scheduled to take offices in the new Aquilla Court building.

Dr. M. C. Howard and Dr. W. H. Melcher, Omaha, are about to go to Vienna for several months' study.

Dr. C. W. Pollard, Omaha, has become sole owner of the Stewart Maternity hospital on St. Mary's avenue.

Dr. M. G. Wohl has returned to Omaha from a seven months post graduate course at Philadelphia and New York.

Dr. F. B. Young, Gering, and Dr. T. J. Vanderhoof, Scottsbluff, have gone to Chicago to take special work in surgery.

Dr. Margaret Koenig, former Lincoln and Omaha

physician, is working in Arkansas at present, under the Sheppard-Towner act.

Dr. H. J. Lehnhoff, Lincoln, spoke before the Crete Rotary club, recently, on the "Relation of the Physician to the Patient."

Dr. and Mrs. W. N. Anderson, Omaha, have gone to Europe for a year. The doctor has but recently recovered from an operation.

Dr. S. Morgulis, Omaha, for the past year connected with one of the medical schools, will go to Cuba in June to do research work.

Dr. and Mrs. Charles H. Breuer, Lincoln, have returned from a five weeks' cruise in the West Indies and along the north coast of South America.

Dr. W. D. Guttery, a former practitioner at North Bend, later in institutional work at the state hospitals at Lincoln and Norfolk, has published a book on "Practical Psychiatry."

Dr. Henry A. Johnson, for the past sixteen years associated with Dr. I. Lukens, Tekamah, is about to leave for a broader field, with the southwest coast his present objective.

Dr. H. P. McKnight, Uehling, has entered suit against Dodge and Burt counties, jointly, for \$1,700, for injuries received at a dangerous culvert on the Dodge-Burt county line some time ago.

Dr. Frank B. Young, Gering, will attend the annual meeting of the Arkansas Medical Society at Fayetteville, May 20-22, at which time he will present a paper on "Descending Testicle, with Case Report."

Dr. George L. Wagner of Deshler was found guilty of the illegal issuance of narcotic prescriptions in federal court at Hastings. It is said that the doctor made a good defense, but the law and the court was against him.

Fraternity hospital, Tekamah, conducted for a number of years by Drs. Lukens and Johnson, has passed to the control of Dr. Wren Morrow, Tekamah, and his brother Dr. Lawrence Morrow recently of Brunswick, who will operate it.

Dr. Albert D. Davis is leaving in May for a year or more post-graduate work in oral and plastic surgery, and will spend time with many noted men in this country. He will sail the latter part of May for Europe, where he expects to spend about a year.

A Clinic has been organized at Ord of which Dr. C. W. Weeks of Hilcrest Sanitarium, Ord, is chief surgeon and 9 physicians and surgeons of Ord and nearby towns are members. This novel experiment will no doubt be watched by the profession with much interest.

NECROLOGICAL

Dr. Alexander Bear, Richmond, Va., University of Maryland, 1860; pioneer physician and surgeon of the Elkhorn valley; prominent in Nebraska politics and in business affairs many years; died, April 2, aged 84. Dr. Bear located at Fremont in 1867, moved to West Point in 1871 and to Norfolk in 1872 where he remained in practice until 1909 when he retired and moved to Richmond, Virginia. (For sketch of Dr. Bear see Nebr. State Med. Journal, March 1923).

Dr. W. H. Philips, Wayne, Sioux City College of Medicine, 1899; practitioner at Carroll before the World War when he enlisted in the Medical Corps; since then in practice at Wayne, died in a Sioux City hospital March 13, aged about 53.

Dr. H. A. Shull, an early day resident at Auburn, died at the home of his daughter at Barneston, aged 86.

Dr. Hiram L. Randali, an early day practitioner of Falls City, a veteran of the civil war, died at the Soldiers' home at Grand Island, April 9, aged 85.

Dr. Beecher B. Baldwin, Los Angeles, Calif., Creighton University College of Medicine, 1906; practitioner at Omaha, Lincoln, Elkhorn and Marquette, Nebr., in his earlier professional career, but for the last few years a practitioner at Los Angeles, was murdered in an apartment April 11, aged about 39.

BOOK REVIEWS

TRAIL CRAFT. By Claude P. Fordyce, M. D. Octavo, cloth, 200 pages, 29 illustrations. Price \$2.50. Stewart Kidd, Publishers. Cincinnati.

It is a pleasure to announce a book by a Nebraska author and a very great pleasure if the book represents the work of a member of the Nebraska medical profession. Most of the readers will recognize the author as Dr. C. P. Fordyce, of Falls City, councilor of the Third Councilor District of the Nebraska State Medical Association.

The book assumes to be an aid in getting the greatest good out of a vacation trip. Dr. Fordyce is an experienced wilderness traveller, is a member of the Sierra Club, the Colorado Mountain Club, etc., and has an acquaintance with the National Parks and the remote wilderness regions of the United States and Alaska that gives authenticity to his words. Trail Craft tells you how to meet the emergencies which may mar a wilderness tour and smoothes the way.

There are twenty chapters of which the following are fair samples: Wilderness Handicraft; Motor Camping; Practical Mountaineering; Hints on Desert Travel; The Camp Cuisine; Tents and How to Use Them; Taking the Place of the Doctor; Uses of Adhesive Plaster; Game Hunting With the Camera.

It is altogether a very readable and valuable book, not alone for tourists, but for the average reader.

BOOKS RECEIVED.

GERIATRICS. A Treatise on the Prevention and Treatment of Diseases of Old Age and the Care of the Aged. By Malford W. Thewlis, M. D., Cloth. Price \$4.50. Pp. 401 with illustrations. Second Edition. St. Louis: C. V. Mosby Co. 1924.

HERNIA. Its Anatomy, Etiology, Symptoms, Diagnosis, Differential Diagnosis, Prognosis, and Operative Treatment. By Leigh F. Watson, M. D. Cloth. Price \$11.00. Pp. 660 with illustrations. St. Louis: C. V. Mosby Co. 1924.

PRACTICAL CHEMICAL ANALYSIS OF BLOOD. By Victor Caryl Myers, M. A., Ph. D. Cloth. Price \$4.50. Pp. 232 with illustrations. Second Revised Edition. St. Louis: C. V. Mosby Co., 1924.

SEXUAL PROBLEMS OF TODAY. By Wm. J. Robinson, M. D. Cloth. Price \$2. Pp. 340. 12th Edition. New York: The Critic and Guide Company, 12 Mt. Morris Park West. 1923.

REPORT FROM THE DEPARTMENT OF PATHOLOGY AND THE DEPARTMENT OF CLINICAL PSYCHIATRY. Central Indiana Hospital for the Insane. Vol. VIII.

MANAGEMENT OF THE SICK INFANT. By Langley Porter, B. S., M. D., and Wm. E. Carter, M. D. Cloth. Price \$8.50. Pp. 659 with illustrations.

Second Revised Edition. St. Louis: C. V. Mosby Co. 1924.

MEDICAL RECORD. Visiting List or Physicians Diary. Price \$2.00. New York: Wm. Wood & Company, 51 Fifth Ave.

APPLIED PATHOLOGY IN DISEASES OF THE NOSE, THROAT, AND EAR. By Joseph C. Beck, M. D., F. A. C. S. Cloth. Price \$7.50. Pages 280 with 268 illustrations. St. Louis: C. V. Mosby Co. 1923.

METHODS IN MEDICINE. THE ANNUAL OF THE MEDICAL SERVICE OF GEORGE DOCK, M. D., Sc. D. By George R. Herrmann, M. D., Ph. D. Cloth. Price \$6.50. Pages 521 with illustrations. St. Louis: C. V. Mosby Co. 1924.

THE ANTIDIABETIC FUNCTIONS OF THE PANCREAS AND THE SUCCESSFUL ISOLATION OF THE ANTIDIABETIC HORMONE—INSULIN. By J. J. R. MacLeod, M. D., and F. G. Banting, M. D. Cloth. Series Number Two. Price \$1.50. Pages 69 with illustrations. St. Louis: C. V. Mosby Co. 1924.

THE NEW SCIENCE OF RADIENDOCRINOLOGY IN ITS RELATION TO REJUVENATION. By Herman H. Rubin, M. D. Cloth. Pages 64. New York: Medical Science Publishing Co. 1923.

NATIONAL HEALTH SERIES. CANCER. By Francis Carter Wood, M. D.; MAN AND THE MICROBE. By C. E. A. Winslow, Dr. Ph. COMMUNITY HEALTH. By D. B. Armstrong, M. D., Sc. D. THE BABY'S HEALTH. By Richard A. Bolt, M. D. PERSONAL HYGIENE. By Allan J. McLaughlin. 16 mo. full flexible fabrikoid. Average number of words per volume 18,000. Price per volume, 30c. Set of 20 volumes \$6.00. New York: Funk & Wagnalls Company. 1924.

TREATMENT OF DIABETES MELLITUS. By Elliott P. Joslin, M. D., M. A. Cloth. Price \$8.00. Third Edition. Pages 784, with illustrations. Philadelphia and New York: Lea & Febiger. 1923.

A MANUAL OF PROCTOLOGY. BY T. Chittenden Hill, Ph. B., M. D., F. R. C. S. Cloth. Price \$3.25. Pages 279 with illustrations. Philadelphia and New York: Lee & Febiger. 1923.

DIAGNOSTIC METHODS. By Herbert Thomas Brooks, A. B., M. D., F. A. C. P. Cloth. Price \$1.75. Fourth Edition. Pages 109 with illustrations. St. Louis: C. V. Mosby Co., 1923.

DISEASES OF THE SKIN. By Richard L. Sutton, M. D., LL. D., Cloth. Price \$10.00. 5th Edition. Pages 1214 with illustrations. St. Louis: C. V. Mosby Co. 1923.

HABITUAL CONSTIPATION. By Ismar Boas, M. D., Professor of Medicine in Berlin. Translated by Thos. L. Stedman, M. D. Cloth. Price \$2.00. Pages 299. New York & London: Funk & Wagnalls Company. 1923.

VENEREAL DISEASE IN THE AMERICAN EXPEDITIONARY FORCES. By George Walker, M. D. Cloth. Baltimore: Medical Standard Book Co.

THE MEDICAL DEPARTMENT OF THE U. S. ARMY IN THE WORLD WAR. Vol. V. Military Hospitals in the United States. Cloth. Pages 857 with illustrations. Washington: Government Printing Office. 1923.

THE MEDICAL DEPARTMENT OF THE U. S. ARMY IN THE WORLD WAR. Vol. 1. The Surgical General's Office. Cloth. Pages 1398 with illustrations. Washington. Government Printing Office 1923.

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CONTENTS

	Page		Page
The Practice of Medicine and Some of Its Problems, Morris Nielsen, M. D.....	201	EDITORIALS—	
The Problem of the General Practitioner, John Buis, M. D.....	204	Journal Business Announcement.....	236
The Opportunities of the Present Day Surgeon, K. S. J. Hohlen, M. D., F. A. C. S.....	207	The Fifty-Sixth Annual Meeting.....	236
Notes on Clinical Surgery, John E. Summers, M. D.....	209	Nebraska Association of Medical Women	237
Diagnosis of Surgical Lesions of the Kidney, C. Emerson, Ph. D., M. D., F. A. C. S.....	212	Nebraska Academy of Ophthalmology and Oto-Laryngology.....	237
Pain in the Back, Robert D. Schrock, M. D.....	214	Nebraska Radiological Society.....	238
Complications of Gonorrhea, W. L. Ross, Jr., B. Sc., M. D.....	218	Maternal Mortality in Omaha.....	238
Eighteen Cases of Catarrhal Jaundice Following Influenza, J. Dwight Davis, M. D.....	222	The Library of the University of Nebraska College of Medicine.....	239
Some Interpretations of Cardiovascular Signs, Stanley Clements, M. D.....	225	Pemphigus Vulgaris with Findings in the Spinal Cord Suggesting the Etiology of the Skin Lesions: Report of a Case	239
The Glands of Internal Secretion, C. A. Roeder, M. D.....	227	A Pioneer Nebraska Doctor Who Became a Landowner and Financier....	240
Alkalies as an Adjunct in Septic Surgical Cases, L. E. Penner, M. D.....	229	The Chicago Session.....	240
Case Report of Pregnancy Complicated by a Large Ovarian Tumor, with Pleasing End Results, Earl C. Sage, M. D.....	230	Dean Niles and "The Poor Boy in Medicine", Again.....	240
Case Report: Large Ovarian Cyst, Max Emmert, M. D., F. A. C. S.....	232	Editorial Paragraphs	241
Presentation of a Case of Fracture of the Navicular Bone of the Wrist, Joseph A. Weinberg, M. D.....	233	Foot and Mouth Disease.....	241
Pain Due to Lesions of the Urological Tract, Edwin Davis, M. D., F. A. C. S.....	234	Nebraska University, Postgraduate Course in Medicine	241
		Guide to Preparing Narcotic Order Forms	242
		The Army Medical Corps As a Career.....	242
		Nebraska Alpha Chapter New Members.....	242
		The Societies	242
		Human Interest Tales.....	243
		Necrological	244

THE PRACTICE OF MEDICINE AND SOME OF ITS PROBLEMS*

Morris Nielsen, M. D., Blair, Nebr.

The practice of medicine today is entirely the other extreme to what it was not so very many years ago. At that time it was made up of individuals who considered themselves wholly concerned with prescribing something or doing something for a person when he became sick. What that something was, depended entirely upon the period one chooses to consider. The practice of medicine arose primarily out of sympathy and a desire to help a fellow being in distress. I have no doubt that the very first efforts were directed toward injuries and accidents inflicted by

animals. Later the early observers noticed that one could be distressed or in pain without accident or injury, thus reasoning that the human machinery could get out of order by other means than violence. Observation continued, and with experience came definite knowledge.

Those who were sick did certain things, such as refusing food, or assuming certain postures that gave relief, or they were more comfortable when in contact with heat or with cold as the case might be. From this crude beginning of definite study and attempt at relief, sprang the knowledge that

*Presidential Address delivered before the 56th annual meeting, Nebraska State Medical Association, Omaha, May 13-15, 1924.

there was something to be done for the sick if one could but find the proper procedure. From the beginning the priest and the physician were identified, and medicine never became wholly dissociated from religion.

The Egyptians used incantations, magic, symbols, prayers and prescriptions for all sorts of ailments. There were gargles, salves, snuffs, inhalations, suppositories, fumigations, enemata, poultices and plasters. Surgery was not very highly developed, but the knife and actual cautery were freely used. Hygiene reached a high stage of development among the Egyptians. Cleanliness of the person, of the dwellings and of the cities was regulated by law. Alchemy or chemistry also had its beginning in Egypt. The Babylonians believed disease was due to evil spirits or demons and were the first to study the liver. The science of hepatoscopy became of extraordinary importance to them. This was also practiced extensively by the Etruscans, and from them it passed to the Greeks and the Romans, among whom it degenerated into a more or less meaningless superstition. Hebrew medicine was most interesting. The commands concern prophylaxis and suppression of epidemics, venereal disease and prostitution. Care of the skin, baths, food, housing and clothing, labor, sexual life and discipline of the people were also regulated. Through Greek medicine, the Alexandrian School, Medieval Medicine and the work of men like Harvey, Morgagni, Sydenham, Cullen, Rush, Hunter, Jenner, Laennec, and later to the efforts of Pasteur, Koch, Lister and Gorgas, we are indebted for the foundation underlying the principles of Medicine of today.

We differ from the physician of the past whose thought was chiefly to do something when a person was ailing, in that while we recognize the importance of so doing, we go even further and prevent, if possible, the individual from becoming sick. For many years systematic study of sanitation and the control of epidemics has been productive of the most gratifying results. The world had seen what has been done in Havanna and in the Canal Zone, how Yellow fever and Malaria have been suppressed, and how the most pestilential spots on earth may be converted into healthful habitations for man. Scientific Medicine has made these demonstrations, and the world applauds, but seems slow to make general application of the rules of hygiene.

So long as humanity refuses to accept the

new order, we can only stand by in the hope that sooner or later we may be permitted to direct their steps in the proper paths. Much can be said in explanation as to why this apathy exists on the part of the public, some of it justifiable and more of it is not. It is not to be wondered at that the public is at a loss what to believe, when there are so many practitioners who are incompetent and without the proper scientific training demanded from the rest of us in the same vocation. The public mind does not always differentiate between the thoroughly trained medical man and one who has had little if any training, because the irregular practitioner is legally licensed to practice the same as we are. They reason, and not without merit, that if the law is for the protection of mankind, then they must necessarily be qualified to practice the healing art or the law would not give them this permission.

The legalizing of irregular cults in medicine is a custom confined entirely to the United States. Several years ago Dr. E. P. Quain issued a questionnaire to a number of foreign governments, as to the possible presence of sectarian medicine in other countries. In not one of the nations was there any medical sect or cult sufficiently recognized to be legalized. To quote Dr. Quain: "The ambassador from one of the prominent world powers of that time, volunteered in his answer the explanation why America is the only civilized country where different medical schools or sects could exist. He reminded me that in all other countries there is a department, or ministry of education which guides and controls all questions of higher learning, including the sciences and medicine; that no laws pertaining to scientific questions could pass without proper scientific advice; and that the United States is the only country in which the uneducated public has any direct control of scientific problems by means of the vote".

This is a deplorable situation, but nevertheless we have it to contend with. The remedy lies with ourselves; we must re-establish confidence in the public mind for the properly trained medical man, by giving to the patient that which no cult or sect practitioner can possibly give. We must be so thorough in our work that there can be no comparison with other forms of healing. We must show more consideration for the to be expected ignorance of the patient and instruct him as to the why and wherefore of legitimate scientific medicine. Instead of go-

ing into details we have assumed that the patient was qualified to understand what was being done and why it was essential to do so. This was an error. The reason for the hold that the irregular practitioner has upon the public is that he has considered the individual and educated him along such lines as best served his purpose, and the patient having no knowledge to the contrary, nor being qualified to judge truth from untruth, readily believed all he was told. Now, what we must do is to tell people the truth and prove it to them.

Not only to the layman has the legalizing of irregular practitioners been costly, but to the medical profession itself. It has caused some very able men to get discouraged and step out of our ranks and into other lines of endeavor, and it has caused others to use the same unscrupulous methods as the irregulars. Go into the offices of some of the men that a few years ago were a credit to our profession, and you will find them cluttered with machines of various types, each definitely guaranteed to accomplish the miraculous. They will tell you frankly that the other fellow is out to get the money, and that they too are going to get a share of it, and they will add that they are getting it. Not long ago I asked a friend how a certain doctor was getting along, and he answered that he saw very little of him as he rarely left his office for fear he would lose something and when he was not giving treatments with the electrical machines, he was polishing the brass knobs on them. While it is not my purpose to decry the intelligent use of electrical appliances of merit, I do want to call attention to the methods that some members of our profession employ. There are those among us who cry the loudest against the cults, whose own conduct is not wholly above reproach. This casts a reflection upon the entire medical profession and while it is only the minority who offend, it is not always easy to make this clear to the public.

Our organization is maintained with a view to giving our all for the benefit of mankind, and not for our personal good or aggrandizement. We have no department pertaining to universal fees, nor to collections; our sole purpose being to advance the knowledge of medicine that humanity may profit thereby.

We will always have within our ranks the fellow who is disgruntled and jealous of the success of his competitor, and who feels it his duty to do all that he can to embarrass

and humiliate him. I thank God for my friends; they have stood the acid test, they are the salt of earth, and what they may lack in some things, they more than make up for in others, and above all they are human. Not long ago I attended a medical society meeting and a physician in telling us the number of medical men in the town added, "and we are all getting along just fine". It was mighty good to hear this, and that is as it should be. When we realize that we are considered legitimate prey by the irregular practitioner and are beset upon all sides by the person who tries to get out of paying his just accounts, why should personal differences among us be so construed as to warrant viciousness. While we know that we are liable to prosecution by unscrupulous and ignorant people, we should remember that there is a difference between prosecution and persecution. It is clearly our duty as I see it to cooperate with each other and be helpful. If we present a united front, there is little from the outside that can assail us, but if we are fighting among ourselves, it is not long before we will disintegrate.

In order to carry out what our progenitors have begun, it is necessary for us to act in harmony. Otherwise the public to whom we have consecrated our efforts will suffer materially. It is impossible to have a healthy mind in a diseased body, and inasmuch as we are primarily engaged in warfare against disease, we should do everything possible to bring about a state of well being to our people. Let us concern ourselves with relieving human suffering when it exists, and try to prevent it whenever possible. There is no controversy as to whether the specialist or the family physician holds the most responsible place in this regard. They are both necessary in our battle against disease. One would suffer materially without the other, and is again an example of how we must work together to get results.

The splendid general cooperation among the medical men has resulted in a generous interchange of opinions and methods that has contributed in no small measure to the marked advancement in medicine. Were we to keep our experiences to ourselves and in general hide our light under a bushel, it would have been impossible for medicine to have developed to its present plane. It is only by avoiding the failures and adopting the successes of our confreres that we really ad-

vance. Experience is truly the best teacher, and those who have had more than others should gladly share it with their fellows. I do not know a more generous body of men in any calling, than the medical fraternity. They realize that they all are striving for the welfare of humanity and are willing to share their knowledge with their fellow man, be he saint or sinner, learned or unlearned. He is aware that we are fighting a common foe, for the betterment of mankind.

I look forward with confidence to the time when preventable diseases will be prevented, and curable diseases recognized in the curable stage and will be cured, and I believe the grandest triumphs of civilization will be the achievements which will result from a realization of the possibilities of preventive medicine.

Let us then put our shoulders to the wheel

in one united body that we may accomplish that upon which man's happiness depends, that posterity may grant the present day generation of medicine the same degree of veneration that we accord to those who have inspired us in generations before. Let us extend the hand of fellowship to the young man who has his race before him, the hand of sympathy to him who is in trouble, the hand of encouragement to him who is discouraged, the hand of appreciation to the older man who has made modern medicine, and let the hand of comradeship be extended among us all, and let us remember as Kipling so truly says:

"It aint the individual
Nor the army as a whole,
But the everlasting team work
Of every blooming soul."

THE PROBLEM OF THE GENERAL PRACTITIONER*

John Buis, M. D., Pender, Nebr.

In presenting this subject for your consideration we shall attempt to view the many complexities involving it with an impartial mind; at the same time we may not be able to avoid emphasizing the field in which we are most familiar, that of general practice. It is not our purpose to laud the general practitioner or to conceal his defects to the detriment or advantage of the specialist or vice-versa. There is a place for both and the harmonious working together of these two classes of practitioners should be to the advantage of the public. If the public is not benefited by their association, then that class whose service can be dispensed with should be discarded and relegated to the scrap-heap.

The increase in the knowledge of medicine has become so large that it is impossible for one mind to comprehend it all. Yet we must not lose sight of the fact that there are certain basic principles involved in every department of medicine. The anatomical structure may vary in minute details, which in the aggregate is immaterial, although of major importance in the individual. Infection is the basis of most diseases, characterized by inflammation, pain, swelling, and loss of function. The process of modification of the various structures follows along fairly well

developed lines, and familiarity in one field is readily applicable in another.

It is the duty of the general practitioner to have a fairly accurate working knowledge of the human body as a whole plus the environment of his patients and their relations to other members of the family and the neighbors. These latter requirements are fields which the specialist is unable to grasp.

With the increase in length of medical training and the requirements of the interne year, every graduate in medicine today has a much larger perspective of his sphere than the graduate of two or three decades ago. This has resulted in a higher degree of efficient service to the public generally. At the same time the advances made in preventive medicine have greatly decreased the service of the general practitioner in the form they were in vogue in the last part of the past century. At that time typhoid was prevalent in every hamlet and the number of cases the physician attended was a fairly good gauge of his success. Better housing has reduced many of the respiratory diseases, while the communicable or neighborly diseases, on account of the education of the public, are not disseminated as freely as formerly. Diphtheria, the scourge of childhood, has been conquered so that it is regarded today as a nuisance on account of the quarantine regulations.

*Chairman's Address, Medical Section, Fifty-sixth Annual Convention, Nebraska State Medical Association, Omaha May 13-15, 1924.

At present the public is educated through newspapers, Red Cross nursing organizations, bureaus of health, radio broadcasting, so that the average individual has a better technical education in the dissemination of disease than the profession had half a century ago. These agencies have contributed to diminishing the services of the general practitioner, and rightly so. The ultimate purpose of a profession is the education of the public so that its services may no longer be needed. Medicine is the only profession that has lived up to the expectations imposed on it. Law has created for itself a greater demand. Today there is probably a greater need than ever before for the clergy.

If medicine is fulfilling its destiny as a profession why do we have the unrest and dissatisfaction among its members? Why is it that various cults and sects seem to be increasing in popularity? Is it because society is unable to comprehend the influence medicine has had on the progress of civilization? Is it due to ignorance or because the public has not been educated along these lines?

Our public schools teach the rise and fall of the Roman Empire, the Crusades, the history of England, and the United States by the wars in which it has engaged. Men who have waded through the blood of their fellow-men, to the bridle-bits, so to speak, are extolled as world characters and as having shaped the destinies of nations for better or for worse. Every schoolboy has a vague idea of Caesar, Napoleon, Washington and the Ex-Kaiser. But how many know or have heard of Harvey, Jenner, Pasteur, Koch, Behring, Reed or Gorgas? These men have served their fellow-men by making the world more habitable and lifted the cloak of ignorance surrounding it. If the public schools gave some instruction along the lines of what these heroes of medicine have accomplished, would we find them as grown men and women following the teachings and inanities of sects and cults? This ignorance is not confined to the man of the street alone. As long as a doctor of divinity will publicly extol the great virtues of osteopathy, or a man holding the degree of master of arts from one of our leading universities, broadcast the wonderful benefits of chiropractic, or prominent jurists and statesmen supply their portraits to the newspapers with the wonderful results of Tanlac, can we blame the ordinary individual for following these fakes?

The army intelligence tests showed that

from the average class down to the feeble-minded constituted sixty-seven per cent of the draft troop. A certain percentage had already been excluded by the local draft boards. So this is not high for the population in general. It is this class, the largest in numbers, which is led by every fad and fancy that crosses the horizon. To eradicate superstition and implant science is an impossibility. With them the "fi-fo-fum" of the quack still has magical possibilities. Experience teaches them nothing. They are always anxious to buy a gold brick, "a pig in a poke", the latest political theory, or the newly advertised cures of the daily press.

How is the general practitioner to handle this conglomerate mixture of ignorance, superstition and feeble-mindedness so as to produce the greatest good to the greatest number? Adapting his ten-thousand dollar education to a level on which he can meet his patient. He is unable to hide behind the massive walls of some hospital and be screened from anxious relatives and meddlesome neighbors by a corps of nurses and the rules and regulations of the superintendent. The economic status of his colleagues is such that they are not willing to throw their influence in his favor if there is a possibility that they will be financially benefited.

This brings us to the fact that the average physician is the most isolated man in his community. If he confers with his colleagues he is regarded as being "up a tree" and looking for support. This is freely circulated with the aid of local high powered broadcasters with more than the usual amplification. If he refers the patient to a specialist or diagnostic group, the other relatives and frequently whole communities feel the necessity of consulting them. We are of the opinion that these groups and specialists are decidedly unfair in their relations with the general practitioner. Because a surgeon has removed a pus appendix or fibroid for some referred patient it does not entitle him to prescribe Nujol for grandma's constipation and salicylates for grandpa's rheumatism, no matter how beneficial it may be, and act as general medical adviser to the community. Neither should a referred patient be passed from one specialist to another without the consent of the physician referring the case. The specialist should be magnanimous enough to realize that the local physician has more at stake than a diagnosis in the referred case. For he has admitted to his clientele that he

is incompetent to deal with the problem at hand. This stigmatizes him to a certain extent and his "friendly enemies" will not be slow to produce the usual local gossip.

At times these groups and specialists are a decided menace to the public, in treating certain cases without giving the patient a written statement of their findings and diagnosis which can be given the local physician in case of emergency. The plea for not doing so is that it will fall in the hands of irregulars. Yet we do not know of any group or specialist that refuses to take a case referred by an irregular. We have seen the disgusting spectacle of a member of the F. A. C. S. consult and have a member of the cults assist him in operating. Not only once but several times.

Regarding the fact that a diagnosis made by a group and not communicated to the patient, except in indefinite terms, is not for the best interests of the patient or the profession we wish to cite the following case:

Mrs. L. traveled to the big clinic. A diagnosis was given her that she had a "blood disease". To the laity this usually means syphilis and so would not be mentioned by the patient. To the physician it may be syphilis or any of the blood dyscrasias. She was given some pills with instruction to take them three times a day and when these were all taken to send for more. In case she became worse to return to the clinic for further treatment. Shortly after her return home she became pregnant. Nothing was said to the local physician until she began to abort at the fourth month when he was asked to come at once. By the light of a coal-oil lamp nothing unusual seemed to be present, except that the patient looked jaundiced, complained of being tired, and exceedingly short of breath on exertion the last few months. She was packed to control a rather free hemorrhage. This was removed in twenty-four hours with the products of conception. She was advised to stay in bed a week and if any untoward symptoms arose, the physician was to be notified. Four weeks later he was asked to see the patient. Clinically, pernicious anemia was written over her in capital letters. Blood slides sent to two different laboratories confirmed the diagnosis. Had this woman died from hemorrhage, as could easily have happened during her abortion, or infection had set in on account of her lowered resistance, the attending physician would have been severely censured while the clinic was to blame.

The average physician is well aware of his short-comings. Also, he is cognizant of the fact that society has not given him a square deal. It has furnished him with a highly technical education and then left him to his fate in making means to repay his obligations to society. The expense connected with the spiritual welfare of a community is borne by its members. Education is not

left to the individual, but a pro-rata expense is borne by every taxpayer. Court-houses that are mainly an ornament and a symbol of our willingness to spend money for returns that are comparatively small if not nil are provided at public expense. Why this unfortunate provision has thus been made is one of the inexplicable mysteries. It may be a relic of the dark ages when disease was supposed to be a visitation of the almighty or that man did not wish to interfere with the edict that "Whom the Lord loveth He chastiseth".

The distribution of hospitals in this state is largely confined to the cities, although the bulk of the population is rural. True, means of travel have brought these much nearer than twenty years ago. But we can conceive of no more refined means of torture than conveying a patient with an acute abdomen to some surgical center. It is in this field that statistics will bear us out that surgery is making no progress, and never will, unless means are devised whereby these patients can be taken care of at home. Mobilizing these cases in metropolitan centers limits the confidence of the public in the profession generally. If expert skill is needed it is better to bring the expert to the patient; not the patient to the expert. It destroys the self reliance of the practitioner himself. His sphere of usefulness in the community is limited. His interest in the study of the science of medicine decreases rapidly. And the result is a mediocre existence against which he rebels heart and soul. His only avenue of escape is to attach himself to some one to whom he can refer his cases for a remuneration. This only adds fuel to the flames for as soon as his confrere has become sufficiently established, the service of the general practitioner can be dispensed with. We have even seen specialists that were highly offended because some man had the audacity to trespass upon their domain.

The man in general practice is not only handicapped by his lack of equipment, except what he himself provides, but frequently the graduates from the nurses training school in the metropolitan hospitals are well versed in telling of the various specialists of their alma mater. To be employed in the country is often regarded as a stigma and a sign of failure in her profession. It has been consciously or unconsciously impressed on her mind that a physician practicing his art out of sight of the dazzling lights is upon

the lowest rung of the medical ladder. Her sense of loyalty to her physician is limited indeed. We have met some that are everything a nurse is supposed to be but they are few and far between.

At every medical society there is usually some one to advocate the instruction of the general practitioner in this or that ology. But even in this era of highly organized publicity when mass movement can carry through what the individual would not dare attempt alone, we believe the "batting" average of the ordinary physician is as good as that of the specialist. As proof of this we wish to cite a few instances. We have seen a F. A. C. S. advise the removal of an appendix when the patient's temperature was 104 and respiration sixty per minute because she had pain in her abdomen. The fact that the respiratory excursion was limited on the right side of her chest, that she was coughing up sputum which contained tubercle bacilli did not seem to penetrate his mind. On another occasion when the abdomen was distended the patient almost moribund from peritonitis, the fact that she had attempted to bring about a menstrual period that had been delayed three months, "with a little white rag" had not been learned by the surgeon.

The diagnosis of a "hair-line fracture",

whatever that is, had been made by an x-ray man, an orthopedist, and a general surgeon. The patient was receiving compensation under the Workman's compensation law for six months so was satisfied with his misfortune. A four plus Wassermann had been overlooked entirely.

An appendix removed, but pus in the urine and tubercle bacilli found after prolonged search, were overlooked and a death certificate signed by a general practitioner. A thyroid gland removed because a reading of the metabolinometer was above normal. A uterus curetted and the prodromes of dementia precox forgotten. A ventro-suspension and an exploratory, followed by typhoid. Prolonged hospitalization for an erratic heart, that had been so for years, and will continue to be so as long as the patient lives.

All these show that no man or clinic has a monopoly on the science or art of medicine. There is no machine, no electric current, no manipulation no matter how extensively advertised, or by whom lauded or extolled, that will compete with laborious and detailed study. Eyes that see, fingers that feel, ears that hear and can interpret what is heard, a nose that has developed a keen olfactory sense, a mind that can correlate the various signs and symptoms of disease is as essential today as in the past.

THE OPPORTUNITIES OF THE PRESENT DAY SURGEON*

K. S. J. Hohlen, M. D., F. A. C. S., Lincoln, Nebraska.

It was decreed by the forefathers of this Association that the chairman of the Section of Surgery give an address, and respecting their wishes it is with much hesitation that I try to fill the bill. I would rather have written on some subject that I am interested in, but it was not to be. I chose this subject especially for the purpose of showing what the opportunities of the younger surgeons are compared to the opportunities had by the Masters in Surgery that have preceded us.

One oftentimes hears that there is not much opportunity left for the younger surgeon to make advances in the field of surgery, claiming that all the honors and advances had been reaped by the older surgeons. Since the advent of the American College of Surgeons one often hears the remark that the

older surgeons organized the same for the purpose of preventing the younger surgeons from buying their business. Giving the reason that the older surgeons had built their business up on this plan and now since they had it built they were turning over a new leaf and trying to keep the neophyte from following in their footsteps.

I do not believe that the above reasons are valid but are the result of the minds of men who have not been successful in their field.

I personally believe that the young men entering the field of surgery have far greater opportunities than the ones that have gone before. To substantiate this I can give numerous reasons and facts that will bear me out. Take it along the line of education. The young man that now enters the surgical field is better equipped in education. Medical schools have for their entrance higher requirements and higher standards for grad-

*Chairman's Address, Surgical Section, Nebraska State Medical Association meeting, Omaha, May 13-15, 1924.

uation such as a six-year course and an internship for a year to finish this training. How many of the older surgeons had the advantages of a five or six year course or even an internship, all of which are required today? Through these educational requirements he is well equipped to enter the field of surgery and if he is willing to work and use that which he obtained through his education he has every opportunity in the world to advance. The education is furthered by the fact that today the hospitals are being standardized, through the efforts of the American College of Surgeons, and that through this standardization of the hospitals, committees and staffs have been organized and modern up to date laboratories installed. Through this standardization the results are that better work is done, the hospitals are better equipped, and of course the better the work the better the young man's training for the future.

The education having been completed let us next consider the recent advances made in different fields that will give him an opportunity to work along certain lines and open new fields of endeavor. Take in the field of bacteriology and biology and as an example the discovery of insulin by Drs. Banting and Best. Insulin will probably open a large field of surgery for the surgeon in diabetics and also in non-diabetics such cases as post-operative acidosis of which a number of cases have been reported by Dr. Wm. Thalhimer. Furthermore, the conjunction of different vaccines and sera leaves a large field for investigation in surgery.

Marvelous strides have been made in the field of thoracic surgery since the war, the war having opened up the subject with renewed vigor. My mind recalls vividly the address by Sir Berkeley Moynihan before the College of Surgeons meeting at Chicago in 1917 on the subject of "Gunshot Wounds of the Lungs and Pleura." It is only a few months ago that in this same building we heard two excellent talks on thoracic surgery by Dr. C. A. Hedblom of Rochester and Dr. A. J. Ochsner of Chicago. There are many others who have been working in this field blazing the trail for the younger man. I am particularly interested in a positive pressure device that can be attached to a gas machine, that was devised by my friend Dr. Sterling Bunnell of San Francisco. This machine appeals to me as a very simple device that will open the field of thoracic surgery to a great-

er extent than any other apparatus that I know of.

The younger surgeons will have far greater opportunities in the field of brain surgery than did his predecessors. The late war has made some startling discoveries and overturned a good many of our former ideas in regard to the brain. I have been especially interested, in the last couple of years, in the use of the spinal manometer for the determination of intracranial pressure. I have been taking spinal readings on a large number of cases at Green Gables and some of the readings are surprising. I think we have in the spinal manometer an instrument of great value. It shows an intracranial pressure even before you find any signs in the eye.

The results of the younger surgeons should show a low mortality, because of the fact that he today has the use of local and regional anesthesia which has made great strides in the last few years. Thus many an operation is not the risk that it formerly was under general anesthesia.

The field of reconstructive surgery is an interesting one. Reconstructive surgery necessary because of various traumata of our industrial life and because of the large number of patients needing reconstructive service on account of the war, offers a tremendous field for the younger surgeons to work in. Take for example the reconstructive repair of the tendons of the fingers and hands. When you consider the free transplantation of a tendon made to restore function, transplanted with success, it really is wonderful. I find that Bunnell is doing notable work along this line.

Last, but not least, think of the advantages the present day surgeon has over the surgeons of twenty years ago in the use of x-ray. Really, things are made easier for the younger surgeons for the x-ray helps them to confirm their diagnosis in bone conditions, gastro-intestinal diseases, urological diseases and many others. Think how happy the older surgeons would have been to have had this aid.

It seems to me that preponderance of evidence indicates that the younger surgeons of today have every opportunity that could be wished for. They are equipped not only to work in the large cities but have also the opportunities of locating in smaller towns where they will be received with open arms. I know of surgeons that have located in these smaller towns that are doing first class work

in the field of surgery and making a success of it. The time is coming, in the near future, when the city surgeon is going to have less and less work because of these younger surgeons locating in the smaller towns.

The following quotation seems to me very

appropriate: "If a man can write a better book, preach a better sermon, or make a better mouse trap than his neighbor, though he build his house out in the woods, the world will make a beaten pathway to his door."

NOTES ON CLINICAL SURGERY

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(Continued from April Number)

PERITONITIS

Eight cases; no deaths. General type, two; pelvic, four—two of these followed an induced abortion and two a positive g. c. infection, (Smears from cervix were positive); tuberculous, two.

One of the diffuse, generalized type was a pneumococcus infection. None of these cases was of especial interest further than has been discussed in previous papers when writing of peritonitis complicating appendicitis. One case of diffuse peritonitis was of the pneumococcus type. Pneumococcus peritonitis is seldom if ever, truly recognized clinically unless it occurs during or immediately following an attack of pneumonia, and then the diagnosis is a surmise. Practically most that we know about this form of peritonitis we get from French writers. Many theories as to its etiology have been advanced, but I am rather of the opinion that it is a case of post hoc, propter hoc. The demonstration of the pneumococcus is the only proof positive of the diagnosis. Several rather identifying symptoms seem to warrant characteristics which may lead one to suspect the pneumococcus type of peritonitis as differing from others. The every-day investigator cannot be depended upon to identify safely the causative organism. Hertzler calls particular attention to this: He says that so much is this so "That while the demonstration of the cocci is the only scientific means of diagnosis, its recognition is often fraught with difficulties". There has been much controversy as to the routes of infection of the peritoneum in pneumococcus peritonitis. That the infection may have several modes of invasion seems probable, viz., from the pleural cavity through the diaphragm, through the fallopian tubes, and as Jensen has claimed, the infection may be hematogenous, making

its way through the intestinal tract. The findings are characterized by the density of the adhesions, the thickness of the pus and the absence of odor. The abscess is usually below the umbilicus and there may be secondary or complicating infections in the middle ear and lungs. When there are accompanying abscesses in the liver, these are probably by invasion through the portal circulation.

The cases of tuberculous peritonitis are of especial interest because of the progressive methods of the treatment of tuberculous peritonitis by heliotherapy, which is promising so much. Artificial heliotherapy associated with or without laparotomy, has been employed with great benefit in the treatment of tuberculous peritonitis, whether the forms were of the exudative of children, or of the dry or adhesive forms of adults. Solar irradiation in the treatment of tuberculous peritonitis sometimes is followed by rapid disappearance of the peritoneal infection, and it is noteworthy that secondary foci, as of the lungs, tend likewise to disappear. For the carrying out of the technique a liberal incision is made and adhesions separated as freely as circumstances safely admit. The sun's rays are allowed to penetrate as widely as possible by retraction of the wound. The exposure should last from fifteen to twenty minutes. One of my cases of tuberculous peritonitis left the hospital in a very promising condition after the abdomen had been opened; the other,—much improved, however,—had a drainage sinus for a long time.

TUMOR OF THE MIDDLE PORTION OF THE DUODENUM

A man fifty-five years of age came to the hospital complaining of pain in the upper abdomen and gastric distension after eating; sometimes there was nausea and vomiting. X-ray findings were considered negative. The man was unable to work and was losing

weight. Myself and colleagues could not arrive at a diagnosis and an exploratory abdominal section was advised. This was carried out but I did not discover the cause of the symptoms. A thick-walled appendix was removed and it was hoped that the symptoms were reflex. There was no improvement. Three weeks later a secondary laparotomy was made and at this time a tumor either behind the duodenum or in its posterior wall at about the middle portion was found. We thought this tumor possibly an indurated ulcer or new growth. I did a gastro-jejunostomy which was followed by relief of all symptoms. The man put on weight rapidly and when discharged was regaining his normal health. Unfortunately, after a few months we lost trace of this patient and the ultimate result is not known.

There was a goodly number of MISCELLANEOUS CASES in my service, a few of which it will be profitable to dilate upon, but all of value as it is in this miscellany that will be found the great majority of kinds of patients met with in every-day practice.

a. One case of Uterine Hemorrhage (glandular hyperplasia), not operative because the patient had a bleeding tendency, viz., bleeding time fifty minutes; coagulation time, ten minutes. This tendency to bleed in those not having the hemorrhagic diathesis is occasionally found when the condition is apparently inexplicable. Bleeders of the male sex seldom grow to adult life. Females transmit the diathesis but seldom or never are subjects of it. During the year I almost lost a private patient, a man, from post-operative hemorrhagic oozing, following a nephrectomy for tuberculosis of the kidney. Local measures were unavailing, the bleeding being finally controlled by the intravenous use of an anti-hemorrhagic serum and calcium chloride. The suggestion occurs that as a pre-operative measure it might be wise in many instances to determine the coagulation time of the blood.

b. Meckel's Diverticulum, one case.

c. Varicose Veins of the leg, one case, a woman weighing 310 pounds. Not operated upon because it was decided that the patient was a poor risk,—she was suffering also from phlebitis, and from a very large umbilical hernia.

d. Salivary Calculus, one case, size of a medium sized marble.

e. Incomplete Abortion, one case.

f. Cervical adenitis, one case.

g. Third degree burn of Axilla, one case.

h. Clavus, one case.

i. Acute Constipation, one case.

j. Unhealed Abdominal Wound, one case.

Patient had an appendectomy three years prior to entering the hospital. The wound broke down three times after being re-closed. Came to the hospital with a discharging sinus. Healed under treatment. Patient discovered to be a malingerer.

k. Functional, five cases. Two cases simulated the acute abdomen, but a differential diagnosis was made. None of these cases was operated upon. They were types of intestinal colic.

DISEASES OF THE THYROID:

Toxic adenoma, two cases. One operated upon with a good recovery; the other was one of large size, with a sub-sternal growth and considerable respiratory embarrassment. Diagnosed as malignant and inoperable.

CARCINOMA OF THE LIP, two cases.

RODENT ULCER OF THE FACE, one case, treated with x-ray.

CARCINOMA OF THE PAROTID GLAND, one case. The patient was very emaciated and operation was not done. Died in a short time and autopsy showed a carcinoma of the parotid with secondary metastases in the lungs, kidneys, liver, etc.

At this time I want to quote my opinion as expressed in a paper read in San Francisco last June, an opinion I have many times spoken and written previously since we have better understood the germ theory of disease. "The day is coming when a cure for cancer will be discovered. It seems that this will happen only when we give up our present theories of its pathology, absolutely hopeless to date, become better students of biology and chemistry, and further seek the problem in a more rational analysis of its relation to the germ theory of disease."

In addition, there were eight cases of injuries happening in the hospital vicinity and receiving emergency care; these were mostly small lacerations and contusions and were taken care of by the internes.

There were also a number of cases of phimosis operated upon by the internes, and it is our rule after circumcision operations to keep the patient in the hospital twenty-four to thirty-six hours, and then dismiss him with instructions to return for observation

and dressings, and as to further care. Two women were sent to the hospital for sterilization; one of them was operated upon; the other was refused on a basis of insufficient grounds.

A very interesting class of patients are those suffering from external infections. There were nine cases of this type: Hand, one; foot, two; finger, one; parotid abscess, one; carbuncle of neck, one; inguinal abscess, one; cervical abscess, two.

These local infections are of the greatest importance for two reasons: Improperly treated, or handled with the best of our knowledge, they may be followed by secondary infections which even prove fatal. Local deformities may result, particularly in the hand, of such a crippling nature as to render this important part of one's anatomy almost useless. Only today I saw a boy with what seemed to be a fatal empyema, which unquestionably was secondary to an infected finger. The finger had been treated properly, i. e., incised, drainage established, and an antiseptic dressing applied.

The early recognition and treatment of local infections, particularly of the extremities, especially when a lymphangitis is commencing or already in positive evidence, is of great importance. By proper treatment, not only great suffering may be prevented, but also resultant deformities and loss of function. In the not infrequent instance, life may be saved. The early establishment of drainage, preferably under local anesthesia, by properly placed incisions and the introduction of rubber dam drains, is the primary procedure. Then, after enveloping the parts, say fingers or thumb, in antiseptic, moist dressings, they should be placed in a semi-flexed position and maintained in this position by a correctly applied bandage. The hand, (fingers), should never be placed upon a splint, in an extended position. I am partial to an alcohol dressing for most types of threatened or developed lymphangitis. The French surgeon Verneuil seems to have been an early advocate of this form of dressing and many others have been his followers. An improvement to the simple alcohol dressing is advocated by Tuffier and Desfosses, and my own experience is in line with the experience of these gentlemen. It is made as follows: Chloral hydrate, five grammes, Castor oil ten grammes, Alcohol (95%), 250 grammes. Either the 95% alcohol, or the al-

coholic mixture is applied as follows (described by Tuffier in his work on Minor Surgery): Take as an example, a lymphangitis of the fore-arm, secondary to a prick or punctured wound of a finger; after incising the wound, (in this instance it is not cauterized or sterilized by carbolic acid or tincture of iodine), the finger is enveloped in a piece of sterile gauze which has been saturated by the 95% alcohol or the alcoholic preparation and the excess squeezed out. The gauze is then placed upon the hand and fore-arm so as to more than cover the inflamed skin or train of lymphatics. Over this is placed absorbent cotton and all held in place by a not too tightly fitting bandage. The dressing should be kept moist from time to time with the 95% alcohol or alcoholic mixture; even better, small rubber tubes, as in the Carrel-Dakin method, may be introduced in the primary dressing, through which the dressings are kept moist, or wet, with the alcohol or the Tuffier mixture.

I have seen some of the early types of lymphangitis clear up completely under this treatment, and also a number of different kinds of infected wounds do remarkably well.

The treatment of boils and carbuncles is of interest and importance, especially that of carbuncles which now and then are followed by a fatal termination when they occur in run-down or diabetic patients. I have some very positive convictions about the treatment of a carbuncle. In the first place I never use a knife upon such an infection and I have yet to see a carbuncle which cannot be killed by the thorough use of the actual cautery. In the early stages when the infection is in its beginning and there are only two or three small openings, the galvano-cautery may be employed, but better the Paquelin; each opening must be followed to its source, which will always be found well under the periphery of the induration. In the more advanced stages I employ soldering irons of different sizes, following each and every discharging area to its focus, and it is remarkable how spread-out these foci are. The cautery should be used until the area or tracts attacked cease to boil. This indicates that all sources, that every area to which the infection has spread has been reached. By a proper use of the cautery two results are striking, one objective, the other subjective; the area attacked by the cautery shrinks up so that the resultant "escharred" wound is much smaller than the inflamed area appeared be-

fore the cautery was used; subjectively all pain ceases, in itself a blessing.

A boil may be aborted in its beginning by painting over it several coats of tincture of iodine. Later a small cautery point may be used to puncture the boil to its base. As a rule it is unwise to squeeze a boil to see if it is "ripe". If a boil is seen for the first time when it has the appearance simulating an abscess with an indurated circumference and a softening center, one of two courses are open: Its softening may be hastened by the use of hot, moist, antiseptic dressings, an antiseptic flax-seed meal poultice, (the meal mixed with a 1-2000 bichloride of mercury solution) is my preference; the ripening, painful boil may be deeply incised with a bistoury or a galvano-cautery knife.

In some individuals carbuncles and boils

recur with such frequency that there is no question but that there is a constitutional tendency responsible. In such instances, besides the local treatment just indicated, it is recommended, and with wisdom, to employ autogenous vaccines. Internally, brewers' yeast taken in liberal quantities has been found of use, in fact, has been regarded by some as almost a specific.

Boils on the face and lips, especially the upper, should be handled with great care. I have seen several deaths from these infections spreading to the cerebral veins. If attacked at all this should be done early and with the cautery. When this is not done or there has been delay, the alcohol dressing is an appropriate one, and in no circumstances should there be any squeezing or rough handling.

DIAGNOSIS OF SURGICAL LESIONS OF THE KIDNEY*

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Being fully conscious of the impossibility of covering the whole field of the diagnosis of lesions of the kidney in so short a time, I have decided to consider a few points that have seemed important with regard to pyonephrosis and kidney stones. The joint use of the cystoscope and x-ray together with bacteriologic and microscopic examinations of the urine, has placed, urological diagnosis almost on the plane of an exact science. We diagnose lesions of the kidney largely on the basis of an exact demonstration of the lesion, rather than on an opinion arrived at from a consideration of probabilities.

Nevertheless, these instruments of precision which are employed in urological diagnosis are subject to error; and I hope to call your attention to a few of the pitfalls which may arise in the employment of such methods of examination—not to detract from their value, but possibly to further our reliance upon them.

There is still an unwarranted tendency to hesitate to resort to the use of the cystoscope and ureteral catheterization, largely through fear of infection, and partly through the desire to avoid the discomfort of cystoscopic examination. So far as infection is concerned, with proper observance of aseptic precautions this fear is unwarranted.

With regard to pyonephrosis, it will not

be profitable to consider the clinical or urological findings which are so well known to all of you. The chills, fever, leukocytosis, pain, tenderness, and perhaps tumefaction present a clinical picture that requires no more elucidation.

In the case of chronic pyonephrosis, the picture is not so clear. It becomes advisable to make use of some of the special methods of examination.

I desire to refer briefly to a class of cases in which I have seen three in a comparatively short time, in which in the presence of a pyonephrosis there was a perfectly normal bladder urine. Because of the presence of a normal bladder urine, these cases were repeatedly undiagnosed. I will briefly relate the case history of one of these which illustrates the point I hope to bring out—that the presence of a perfectly normal urine does not rule out a serious kidney lesion; and that it is possible to have even very severe pyonephrosis with normal urine passed from the bladder.

Mrs. C., age 45, M. Housewife, had never had any serious illness until last summer although always considered herself "not very strong". About June 15, she had a chill followed by intermittent fever, sweats, sallow complexion, pyuria, asthenia and prominent tender tumor presenting in the left iliac fossa. The acute attack mentioned continued several weeks with patient bedfast and attended by a nurse. Gradual improvement then began and continued to the present.

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At present patient is apparently well and came to learn the cause of her last summer's illness because she feared a recurrence. The physician in charge had been unable to make a diagnosis. The tumor had disappeared and apparently all symptoms had entirely abated except for slight weakness.

On examination all physical findings were negative except the following:

1. Undernourished and slightly anaemic,
2. Slight apical systolic murmur,
3. Both kidneys moveable and the right seemed tender,
4. No mass could be felt in the left iliac fossa,
5. Pulse 84, temp. 98.6, resp. 19, blood pressure 110-80,
6. Wasserman test negative,
7. Leucocytes 10000.

Cystoscopy was performed, both ureters catheterized and pyelographic pictures taken with following results:

Left kidney—

1. No urine,
2. Aspiration secured pus,
3. Pyelogram—Ureter closed 3 in. above bladder,
4. Phenolphthalein—no return,
5. Pus—thick, aspirated.

Right kidney—

1. Free flow of urine,
2. Clear, acid, 10-20,
3. Alb., sugar, casts, pus—negative.
4. Phenolphthalein returned in 10 min.
5. Pyelogram—normal.

In the left side, where she had had her previous trouble, the catheter entered the uretral orifice for two inches and I could not pass it further. No urine

ed from the end of the catheter. The other tests showed perfectly clear findings of the right kidney.

The urine at that time had just an occasional pus cell in it. I diagnosed from the radiographic pictures and cystoscopic examination a pyonephrosis with closed ureter and nonfunctioning kidney, and advised its removal. A delay of two weeks was advised because of the irritation that might have occurred from the use of the uretral catheter in the right kidney.

She returned two weeks later and said she thought it was unnecessary to undergo an operation, since



Showing filling defect at junction of pelvis and ureter simulating stone but due to air.

she felt well, and the urine was absolutely free from pus. I still felt sure of the diagnosis, and we removed a very large kidney that was merely a sac of pus—practically sterile pus at this time—a kidney three times the normal size.



A. Stone in upper pole of kidney. No contrast with pyelographic medium.
B. Kink in ureter.

came from this kidney. I withdrew the catheter and forced air through it and reintroduced it. I still obtained no urine or pus from that side. I then aspirated with the syringe, and nothing came through. Upon withdrawing the catheter and forcing air through it, a drop or two of pus was expell-



Showing contrast between kidney, pelvis and stone, when former is injected with air.

It might be interesting to consider what might have happened if we had left it there. It apparently was quiescent and perhaps never would have

caused trouble; yet there was fully a pint of pus in it and the probabilities are there would have been a recurrence.

In the diagnosis of kidney stone, there is possibility of error in two ways: First, stone may be diagnosed when there is none in the kidney or anywhere in the ureteral tract, due to the fact that other things in this region may cast shadows on the x-ray plate. Fecoliths, calcified lymphatic glands, deposits of material in the intestines and gouty deposits, will cast shadows which simulate renal stones. In order to obviate this error, a catheter which is impervious to the x-ray may be passed into the ureter and the stone may then be proved to be outside of the urinary tract.

Second, we may fail to find stones that are present. If we rely upon the x-ray picture alone, approximately 10 per cent of stones along the urinary tract will be overlooked. By the use of a wax tip catheter, a

certain portion of these may be discovered, particularly if it is a rough stone.

Stones which cast no shadow may be demonstrated by the use of pyelographic medium, because stones displace the medium. When you inject sodium iodide, for example, we may find a defect in the normal contour of the ureter or pelvis due to displacement by the stone.

Another procedure which is of great value in determination of the presence of stone and in accurately localizing it, is the injection of air into the ureter and pelvis of the kidney. A stone which is invisible on an ordinary x-ray picture may be well defined after air has been injected, because there is a greater contrast between the air in the pelvis and the stone, than between the uninjected pelvis and stone.

The accompanying reproductions of x-ray films illustrate the previously mentioned facts.

PAIN IN THE BACK*

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Pain in the back is a symptom of such frequent occurrence that we are many times inclined to regard it as almost a normal possession. Painful backs may be the disadvantage imposed upon the "genus homo" for his determination to leave the ambulatory habits of his arboreal ancestors and to depend too much upon his hind legs for purposes of support and progression. However, the advancement that has been made possible by the removal of our front feet from the ground, amply repays us for the mechanical disadvantage. None of us would be willing to revert to our former quadruped state.

Most backs are longer than they are broad. The variety of conditions giving rise to pain in the back would make a list of great length; their consideration and discussion would extend over the entire field of anatomy, physiology, pathology and individual body mechanics. The effort shall be to merely suggest lines of investigation for consideration in differential diagnosis. Too long we have been content to apply a porous plaster or counter irritant and give a transient symptomatic relief. In many cases we are not yet beyond that stage in our therapy. The past five years have seen definite interest di-

rected to the problem of backs. This study is bringing dependable information in numerous conditions, but the whole field is still too hazy.

We shall exclude from consideration the acute painful back of the acute infectious diseases as influenza, acute tonsillitis, variola, malaria and dengue fever. With their exclusion we must retain the fact that we are dealing with acute infections whose organisms or toxins seem to possess particular attractions for muscle, bone and joint. It naturally follows that a sinus or antrum disease secondary to an influenza or a chronically inflamed tonsil, will exert upon muscle, bone and joint, a less active but more prolonged and damaging effect. This then leads to the recent wave of "focal infection." The pendulum of enthusiasm is beginning to swing through a more rational arc. The radical and conservative must approach each other still more closely.

It is sufficient to merely mention the pain of duodenal ulcer often referred to the back between the levels of the IV to XII posterior spinous processes; the scapular pain of gall-bladder and liver disease and the low dorsal pain of diaphragmatic pleurisy. Kidney disease, and especially new growths, present a

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dull dorso-lumbar pain. Retro-peritoneal irritation from new growth or inflammatory processes gives rise to an insidious and puzzling backache, explained only when the masses are demonstrable. The lumbo-sacral pain of bladder and prostate disease have other active signs associated.

The relation between pelvic pathology and backache is definite but disappointing; clinically the high cervical and occipital pain of ovarian disease, is undisputable. The modus operandi of this referred pain is not clear. The low back pain is the more disturbing both to patient and doctor. It is the most disturbing when, after thorough removal of pelvic pathology, the lumbo-sacral pain does not disappear. Laparotomy with shortening of round ligaments or ventral suspension for retrodisplaced uteri has failed as a panacea for backache. The percentage of cures is very low.

The following ideas have been recently corroborated by an eminent gynecologist and the comparison is his own without suggestion. Low back pain occurs while the retroversion is taking place and is due to the gradual stretching of the uterine ligaments. After retroversion has taken place, the ligaments are completely stretched and the uterus is supported by the strong pelvic walls, pain ceases to be a symptom. A close analogy is drawn to acute or chronic foot strain. Pain and muscle spasm are marked while the ligaments of the foot are in the process of stretching. After the foot has become flat, pain and spasm are much relieved. For back pain due to uterine displacements, simple therapeutic tests will often give definite answers. With the patient in knee-chest position, light wool tampons or an efficient pessary is placed in the posterior cul-de-sac, so correcting the mal-position. This is worn 24 to 48 hours without suggestion of its purpose. Relief of symptoms is justification for positive conclusions. A uterus freely movable in the pelvis with changing positions of the patient, can rarely be accused.

Chronic inflammatory pelvic conditions give too many other differential signs and symptoms; those backaches are variable with the changing inflammatory processes. Their intensity is periodic, closely associated with menstruation and relieved with the relief of congestion. There is constantly accompanying colicky or cramping hypogastric pain.

The anatomic explanation for this type of back pain may be on one of two assumptions; first, the posterior pelvic wall by contiguity is involved in the inflammatory process, resulting in a peri-neural irritation in the lumbar and sacral plexes. This irritation shows itself clinically as a referred pain in the sacral region of the back, in the midline and is not accompanied by local tenderness or muscle spasm. The second assumption is that the back pain is referred through branches of ilio-hypogastric or genito-crural nerves, and with this mechanism there are in addition to the low back pain, manifestations over the external aspect of the thigh following the distribution of the external cutaneous nerve.

An overlooked sigmoid or distended caecum may give rise to dragging pain in the back but this is more commonly lumbar than sacral; chronic constipation due to atonic conditions of the large gut offers two reasons for backache;—(a) mesenteric drag, and (b) so-called auto-intoxication producing general lassitude and diminished muscle tone.

“Mesenteric drag” is also the cause of the back pain of visceroptosis. Relief of the mesenteric tension gives relief of the symptoms. The most available agent for this relief is the anterior abdominal wall. Numerous patients have been put to bed, fed thousands of useless calories to increase the amount of intra-abdominal adipose tissue and thereby give better support to their abdominal organs. The load was merely increased. The carrier of that load is the muscles of the anterior abdominal wall. Added strength must be given to those muscles. Muscle strength is increased only through intelligent active exercise, directed to the part to be strengthened. The recti muscles, the external and internal obliques are voluntary muscles. Yet many patients have to be taught how to contract these muscles. These muscles are usually chronically relaxed and hence atrophic. Rebuilding these muscles by consistent exercise will relieve many visceroptotics. Where the patient will not give adequate cooperation, a low abdominal support must be substituted.

The physiology of muscle is very well worked out from a laboratory standpoint. Bones and ligaments are less well understood. The combined function of muscle, ligament and bone, are recently receiving more attention in the study of Body Mechanics and ap-

proach is being made through the study of faulty posture.

Clinically—three classes of backs are recognized:

1. Long, narrow
2. Broad flat
3. Hollow.

The long narrow back is the one predisposed to strain; the broad flat back is the one of strength; the hollow or sway back is the one of mal-nutrition, debility or carelessness. The attitude of the third group is usually a fatigue attitude, head forward, stoop shoulders, pendulous abdomen, tilted pelvis and more commonly a one-legged stander. Chronic constipation is almost constant and low back pain very frequent, especially in rapidly growing children. Correction of that faulty posture is essential and will avoid many chronic weak backs, as well as prevent many adolescent scoliotic deformities. In adults, faulty positions at work are responsible for back aches. Faulty foot mechanics in adults is probably the most common cause, and in women more than men. Improper shoes with poor foot balance bring on early fatigue in standing. This early foot and leg strain becomes an ascending process and the discomfort is centralized in the lumbo-sacral region.

The second grouping is that of congenital deformities.

Congenital abnormalities in the spine unrecognized, are by no means rare spina bifida occulta is the most frequent; supernumerary vertebrae, lumbar ribs are not uncommon. These abnormalities render the spine less resistant to normal stress and strain. Impingement of the transverse processes of the 5th lumbar upon the ilium or sacrum is being given less often as a cause of low back pain since the demonstration has been made of the difference in planes of anatomic positions.

The third grouping is that of the traumatic backs.

- a. Simple muscular or ligamentous strain.
- b. True sprain (ligament and periosteum).
- c. Ligamentous rupture or relaxation associated with displacement.
- d. Fracture of vertebrae.

The recognition of these four classes of lesions is not easy. The degree and manner

of receipt of violence, the immediate and late symptoms, the signs brought out by various movements of the trunk coupled with the x-ray which must be of superior quality to be of any value;—all of this evidence needs to be carefully judged. Two other lesions—(1) lumbo-sacral and sacro-iliac lesions, are usually regarded as traumatic. The patients' attitudes are almost characteristic; the lumbo-sacral has a hollow back, the lumbar region seems shortened, the pelvis rotated forward, there is pain on pressure over the 5th lumbar spine; more commonly there are urinary disturbances, especially urgency and frequency, diurnal rather than nocturnal. The referred pain is in the distribution of the anterior crural over the anterior aspect of the thigh. The sacro-iliac lesions show a list of the trunk to the opposite side, slight flexion of the thigh with diminished range of extension, tenderness over the sacro-iliac joint and along the course of the sciatic nerve. The referred pain is over the distribution of the sciatic on the posterior aspect of the thigh. X-ray in these two conditions is not diagnostic. The technical difficulties are too great for the average operator; without exceeding care as to the plane of exposure, the symmetric position of the patient, the equidistance of each sacro-iliac from both tube and plate, distortions can be made even in the normal pelvis. The difficulty of obtaining a good detail picture of the 5th lumbar in the lateral position is well known to each of you. In both situations a stereoscopic of fine detail is essential to be of any value. Proper interpretations of these low back pictures is an art. Imaginative minds read far more into a picture than a patient shows clinically. Sacro-iliac relaxation cannot be demonstrated radiographically nor can sacro-iliac displacement, unless the lesion be extreme. Here as in all laboratory examinations, evidence must be guardedly coupled up with the clinical findings.

The last group contains those cases in which disease has attacked the integral structures of the back.

Diseases of the back:

- a. Lumbago.
- b. Non Tbc. Arthritis.
- c. Tbc.
- d. Syphilis of Spine.
- e. Osteomyelitis.
- f. Neoplasms.
- g. Railway or Hysterical Spine.

In the list of conditions previously mentioned as causing pain referred to the back, the disease process was in other organs. Referred back pain is symptomatic; there are no local signs. In both traumatic and pathologic conditions of the back there are definite signs present. These are peculiarities of gait and station, deformity, limitations of active and passive motion, muscle spasm and pain on local pressure. Lumbago is not a disease—it is a symptom complex. It is a manifestation in muscle or nerve of an infectious or toxic process whose site must be determined. Sciatica, sciatic neuralgia, and sciatic rheumatism come in the same category. The discovery and elimination of the source of the infection or toxine is essential to its cure. Symptomatic relief by counter irritants is sufficient to the patient and too often to the doctor. Recurring attacks or chronic lumbago I believe, is merely the fore runner to the disabling osteo-arthritis of the spine. When new bone production is started, elimination of focal infection will not cure the disease and may not even stop its progress. The secondary foci are already established in the bones and joints. Elimination of these foci is impossible. Our treatment then can be only palliative and supporting. Tuberculosis of the spine needs no comment except a plea for its earlier recognition, giving then adequate and prolonged treatment sufficient to prevent the terrific distortions so common in many adults of the present decade. Tuberculous spines demand intensive treatment for two to five years with careful and frequent supervision during periods of active growth through the entire adolescent stage.

Syphilis of the spine is receiving a great deal of attention especially on the Pacific coast. Specific backache is proven by its disappearance under antileptic therapy. The pain of locomotor ataxia has too many accompanying signs to give cause for confusion.

New growths of the spine are more commonly metastatic, the greater number secondary to carcinoma of the breast and carcinoma of the prostate. The pain is dull and aching as contrasted to the sharper lancinating pains of tumors of the meninges or spinal cord. Peripheral nerve symptoms accompany the latter more commonly than in the new growth of spine.

Railway or hysterical spines are becom-

ing less frequent as our carefulness of examination increases. Lawyers have made many a "Railway Spine." Doctors have failed to recognize damaged spines. They too have produced "neurasthenic" spines by minimizing the injury and promising complete recovery within a few days. Most injuries to the back must be considered in terms of weeks. We have through carelessness or ignorance labeled patients "malingerers" when definite pathology existed. Malingering is a condition that has to be met and pain does become a habit. The handling of this habit pain demands the keenest finesse in the psychologic relationship of the patient and the doctor.

In conclusion, back pain may be divided into five great groups:

1. Pain referred to the back, symptomatic; showing no signs in the back showing signs of disease in other organs.
2. Pain in the back due to poor body mechanics with signs of muscle strain.
3. Pain in the back due to minor and often unrecognized congenital deformities rendering the back unable to withstand normal stress and strain.
4. Pain due to injury to muscle, ligament or cartilage or bone, with inadequate repair and predisposing to chronic infectious processes.
5. Pain due to disease in structures of the back accompanied by definite signs in gait-station, mobility, muscle spasm and local tenderness.

(The classification used in this paper is based on one presented at Atlantic City in 1919 by Robert B. Osgood of Boston).

GALLSTONE-COLIC TREATED ABORTIVELY BY TRENDLENBURG POSITION

A. Herrmann (director of the hospital at Karlsbad) frequently experienced a complete cessation of the colic-like pain after lowering the patient's head at the right time, for 5—10 minutes (with the feet lying about 60—80 cm. higher than the head).

Trendelenburg in abdominal position is recommended by Schnitzler in cases of acute post-operative dilatation of the stomach in consequence of arterio-mesenterial intestinal occlusion (Albrecht). According to him it frequently saves the patient's life.—Ars Medici.

COMPLICATIONS OF GONORRHEA

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Acute gonorrhoeal urethritis in the male, so long as it remains a simple surface urethritis, is a readily curable infection. The infection is complicated when it becomes more than a simple surface urethritis, and is then not so readily curable, the difficulty depending, of course, on the location and extent of the complications. Also, a complicated urethritis is potentially chronic and under the average plan of treatment will only require the passage of a certain amount of time to be recognized as chronic by both physician and patient. Further, any chronic gonorrhoeal urethritis is of necessity a complicated urethritis, there being, in the writer's opinion, no such thing as an uncomplicated chronic gonorrhoea.

A simple gonorrhoeal urethritis taken early and treated properly, especially if that treatment makes use of the newer antiseptic dyes, mercurochrome or acriflavine, should clear up in from one to two weeks. That many of them do so is well attested by the numerous published reports of series of cases treated. That many others do not is proven by the same reports, and these failures are charged to the particular antiseptic used in the series. The writer's viewpoint is that these failures are more properly chargeable to complications, recognized by every good urologist in the chronic stage but all too frequently overlooked in the acute stage.

Any one of the complications to be mentioned in this paper furnishes a focus inaccessible to urethral injections or irrigations. In any reasonably large series of cases there will always be a certain per cent complicated practically from the start. The failure to secure a quick cure in these should not then be properly chargeable to the particular drug used, but rather to the surgeon's failure to get that drug in contact with the infected tissue.

The treatment of gonorrhoea in practically any stage of chronicity should be based upon a recognition of the same principle. An intelligent search for the focus or foci responsible for chronicity and an intelligent and well planned attack will always result in cure. It is my purpose in this paper to consider the more common of these complications and their treatment.

The complications about to be mentioned comprise in each case infection of certain definite anatomical structures. They will be considered in the order in which they may be reached by the infection. First will be Littre's glands and the crypts of Morgagni. Infection of these glandular recesses in the mucosa of the anterior urethra is, I am convinced, seldom recognized during the acute stage. Occasionally it is recognized by the finding of a small tender nodule somewhere along the floor of the anterior urethra. If located on the roof of the urethra palpation will not reveal the small mass. One or several of these glands may be infected at a given time, and unless their presence is recognized they make for a discouraging chronicity of discharge, irritating alike to patient and physician.

In my own work I suspect their presence when the discharge from an anterior urethritis persists beyond the time it should reasonably take for a simple surface infection to subside. I do not hesitate to look for them with a urethroscope, and when found to destroy them with a cautery. I have never had occasion to regret such treatment, and I know I have cut short many an otherwise interminable discharge by such therapy. Urethral medication is, of course, continued during the ten days to two weeks required for healing of the cauterized spot, at the end of which time, if there are no other complicating foci the patient will be free of discharge.

If a patient first presents himself with a chronic urethritis and infection of Littre's glands or Morgagni's crypts or both is diagnosed, treatment should begin with dilatation and irrigation, reserving the cautery for such lesions as do not yield to the dilatation.

Passing up the urethra we next encounter as a possible site of infection, Cowper's glands, with their ducts opening into the urethra on the floor of the bulb just in front of the cut off muscle. One or both of these may become infected. Occurring in the acute stage of a urethritis such infection is usually made manifest by considerable pain and moderate swelling, with possibly some fever. The pain is out of proportion to the visible and palpable swelling because of the location of the gland between the relatively unyield-

ing layers of the triangular ligament. The pressure exerted by these layers on the enlarging mass between causes pain and limits swelling.

Infection of Cowper's glands is easily discovered if looked for by the palpation of the tender mass between the forefinger in the rectum and the thumb on the perineum. Treatment consists of rest in bed, hot packs on the perineum, and later gentle massage in an effort to partially empty the pus through the ducts into the urethra. This is not very satisfactory. Frequently such a gland will require surgical incision and drainage. I have found the non-specific reaction produced by intramuscular injections of sterile milk to be of considerable value as an addition to the treatment.

So much for the acute stage. If the patient first presents himself with a chronic urethritis complicated by Cowper's gland infection, we will find a smaller, firmer swelling of the gland, only slightly painful at worst. Pressure on the gland will cause the reappearance of gonococcus laden pus in a freshly washed urethra, providing the duct be patent. Treatment consists of regular massage of the gland. A much more rational but little used treatment is surgical excision of the gland.

Passing the cut off muscle we enter a field rich in possibilities for complications. We can probably say that the least important of these, though it is by no means unimportant, would be infection of the utricle. I have never made a diagnosis of infection here in the acute stage, though it seems reasonable to suppose that it would be of fairly regular occurrence during acute posterior urethritis. Infection here is occasionally diagnosed at the examination of a patient complaining of a chronic gonorrhoea. Such diagnosis can only be made with the urethroscope and then depends upon finding the opening of this little cavity inflamed, edematous, and possibly fringed with granulations.

Treatment is simple and consists in sterilizing the cavity by a few injections of 2% to 10% silver nitrate. A couple of drops only are required. It is often astonishing to note the improvement following this simple procedure in a urethritis which has failed to yield to every other plan of treatment.

On the verumontanum close to each side of the utricle open the ejaculatory ducts—indeed they occasionally open within the cavi-

ty of the utricle itself. Ascending up these ducts the gonococci may reach the seminal vesicles. The classical picture of acute infection here is heavy pain in the perineum and rectum, pain in the lower abdomen, fever and prostration. The pain may closely imitate that of acute appendicitis, and the patient may lose his appetite and suffer nausea and vomiting. He will tell you that his urethral discharge, which was profuse, has markedly diminished, and on rectal examination you will find the vesicle or vesicles markedly enlarged, firm, hot, and exquisitely painful.

Unfortunately for the unwary physician, this classical picture occurs no oftener in vesicle infection than it does in any other acute infection, and the man who awaits it will have the same fortune as he who insists upon the classical text book picture before operating an acute appendix or diagnosing and treating lobar pneumonia or typhoid fever. In any acute urethritis, if the first four or five ounces of urine passed are not sufficient to wash the urethra free of pus, leaving the remaining urine clear, there is reason to suspect the presence of a posterior urethritis. If all the urine passed be clouded with pus there is certainly a posterior urethritis present. When posterior urethritis is certainly or even probably present, frequent rectal examinations are certainly indicated, that we may detect the first swelling or tenderness of the vesicles heralding an acute vesiculitis.

Diagnosed thus because of continued watchfulness the classical picture of vesiculitis will be sadly incomplete. The patient may even be totally unaware of any change in his condition. Nevertheless the physician may be sure that if either vesicle be tender, or much swollen, or both, vesiculitis is assuredly present.

Classical treatment here again consists of rest, heat through hot rectal douches, and also a discontinuance of local treatment to the urethra. With such expectant or negative therapy, however, I cannot agree. Nor is the recommendation of aggressive attack upon the infection at all original. Bellfield years ago advocated injecting the seminal vesicles in chronic infection, and in 1922* extended this recommendation to acute infection, reporting a series of cases in proof of

*Bellfield, William T., *Anatomy of Gonorrhoea in the Male*, Principles of Treatment. Jour. A. M. A. Apr. 29, 1922. Page 1290.

the efficacy of the method. I adopted this plan of treatment immediately after Bellfield's publication, and have used it since whenever I could. The number of patients so treated has been small, but the result of treatment has been heartily gratifying and I can earnestly recommend it.

Vasotomy necessarily lays the patient up for a few days, during which time perforce local treatment is interrupted. As soon, however, as the patient can come to the office again — usually by the third day — urethral treatment is resumed. I can see no good and sufficient reason for neglecting one infected mucous surface because another is being treated. Again, on the basis of results obtained, I can earnestly recommend the more aggressive plan. Patients so treated will have their period of disability shortened and their chance of developing chronicity greatly lessened.

Chronic vesiculitis may be diagnosed by varying degrees of abnormality and of tenderness of the vesicles as felt per rectum, and may or may not be proven in one way by the ability of the physician to massage purulent or in varying degrees pathological vesicle contents out of the vesicles and ducts and through the urethra. When found such pathological vesicle contents, of course, settle the diagnosis. If, however, the ejaculatory ducts be occluded, massage may yield no such material nor indeed any material at all. Nevertheless, in either case urethroscopy will reveal the inflamed verumontanum which has been so frequently called the mirror of the seminal vesicles; and we will see edema, inflammation, granulation tissue, even polypi, singly and in various combinations. We thus reach a diagnosis.

Treatment consists in irrigation of the urethra combined with massage of the vesicles, deep instillations of weak silver solutions aimed at the inflammation around the duct orifices or better direct application of strong silver solutions or the cautery through the urethroscope to the pathology here, and Bellfield's now classical operation of vasotomy. This operation, filling the chronically infected vesicle with collargol solution through the vas, always yields happy results if other chronic foci also receive the attention which is their due. Used routinely and alone as a method of curing chronic urethritis the operation has been disappointing, nor is the adverse criticism of those who so use

it to be wondered at when one considers how rare is the chronic urethritis due solely to vesiculitis. Yet it is an extremely satisfactory method of treating chronic vesiculitis and hence of that particular phase of chronic urethritis.

Vesiculectomy, most strongly advocated in this country by Fuller, is a major surgical operation apparently in seriousness out of all proportion to the seriousness of the average vesicle infection. In severe vesicle infection endangering general health and resisting all other treatment it is, of course, logical and justifiable.

Descending along the vas from the vesicle to the epididymis the gonococcus produces epididymitis, the symptoms and usual course of which are familiar to every physician. Regularly accepted treatment consists of rest in bed for the patient, rest and elevation of the part, and the application of some medicament to the scrotum. Of all the things I have tried locally, thick cotton dressings kept continually wet with a saturated solution of magnesium sulphate has given me the best results. It usually appears in the list of measures recommended by most authorities. As the patient usually has a fever some antipyretic is given, and local urethral treatment is suspended. A more aggressive treatment is the operation of epididymotomy. Many writers earnestly recommend it. I am convinced that it materially hastens recovery and shortens disability. The only serious question would appear to be when it is indicated and when not. My own opinion is that the bedridden patient is the one to operate and the ambulatory patient the one to let alone.

However, as an epididymitis is always immediately preceded by and coexists with a vesiculitis, it is puzzling to try to understand why the one should be treated and the other neglected. Vasotomy may be done through the same incision and at the same time as epididymotomy, and the fever which falls fairly promptly after epididymotomy will fall still more promptly if vasotomy be done also. The whole force of surgical reasoning would seem to be against neglecting one out of two foci of infection. Yet in treating epididymitis neglect of the vesicle is so extremely common as to be almost universal. This attitude is unfortunate. A wider recognition of the role played by vesicle infection and of the benefit to be derived from aggres-

sive attack upon it is greatly to be desired. Less epididymitis and shorter disability when it does occur will then inevitably result.

Chronic epididymitis is seldom seen, except occasionally in the course of a chronic vesiculitis, and usually subsides if the vesiculitis be treated.

Proximal to the verumontanum and on each side of it are arranged 30 to 40 very tiny openings. These are the orifices of the individual gland structures which in bulk go to make up the prostate gland. With so many openings, the passage of gonococci through any one of which may give rise to acute infection of a corresponding portion of the prostate, one readily sees why acute prostatitis of varying grades of severity is such an almost universal complication of acute posterior urethritis.

The symptoms of involvement of the prostate range, as in the case of the vesicles, from no subjective symptoms and the physical finding of moderate tenderness and swelling per rectum, to severe heavy aching pain in the perineum, dysuria, fever and prostration, with the rectal examination revealing a greatly swollen, hot and tender gland. The process may even go to abscess formation, with destruction of a considerable portion of the gland.

Treatment again includes rest, heat, and antipyretics if necessary. The heat is applied through hot normal salt solution flowing in and out of a two way rectal tube. An abscess if it does not open itself may be opened by rupture with a short beaked sound through the urethra. Nonspecific protein therapy applied by intramuscular injections of sterile milk is here again of considerable value. As in any other complication, I think it a mistake to suspend urethral treatment. I always give such a patient daily irrigations, and I know that they do better than when they are left alone.

Chronic prostatitis is one of the most common complications perpetuating chronic gonorrhoea. The complication, in marked contrast to infection of the vesicles, is quite generally recognized by the profession as a whole. It is diagnosed by the finding of pathology per rectum and by the pathological appearance, gross and microscopic, of the prostatic secretion as obtained by massage.

Usual treatment is by routine and long

continued irrigation, massage, instillation and dilatation. Such treatment will not, however, cure every case, and the reason will be at once apparent if resort be had to careful posterior urethroscopy. Among the various pathological conditions revealed by this procedure two are deserving of special mention. One is the cystic dilatation of a little group of gland ascini located on the superior wall of the urethra just posterior to the level of the verumontanum. Irrigation, instillation, and massage alike fail to reach these. They may usually be ruptured and their contents evacuated by far pushed dilatation with a Kollman dilator. Occasionally it may be necessary to open them by fulgurating or applying the actual cautery to their rather thick walls, before they can be evacuated and healing take place.

The other condition deserving of special mention is the presence of relatively large sinuses or pockets in the substance of the gland, draining through very small openings into the urethra. The urethroscope enables us to see the discharge coming from the tiny opening and the cautery enables us to enlarge this opening. You will frequently be surprised at the extent of the cavity thus revealed. Proper drainage established through the enlarged opening plus proper medication of the cavity will lead to fairly prompt healing which could not have taken place under any other conceivable therapy.

The foregoing remarks cover rather briefly the more common complications of gonorrhoea and their treatment. There is not sufficient space in this paper to consider more remote ones, such as arthritis or septicemia or cystitis or kidney infection, nor those due to anatomical abnormalities—such as infected paraurethral sinus, nor even that due to acquired abnormality of structure including the large subject of strictures.

From the above discussion, however, I wish in closing to draw two important lessons. One is that urethral irrigations are practically useless in the treatment of the complicating factor in a complicated gonorrhoea. They may indeed keep the urethral inflammation under control while the complicating infection is getting well, and for this they should be used, but they will not cure the complication, which must either heal by itself or be attacked more directly.

The other lesson is, that as practically any

of the complicating foci I have mentioned may become sealed off from the urethra and, therefore, be latent, it behooves us not to be satisfied with the absence of discharge and a clear urine in appraising a cure, but

to institute thorough and painstaking search for possible latent foci before telling a man he is cured, and especially before advising him that he may safely marry.

—736 City National Bank Building.

EIGHTEEN CASES OF CATARRHAL JAUNDICE FOLLOWING INFLUENZA

J. Dwight Davis, M. D., Genoa, Nebraska.

Several articles have recently been written on infectious and catarrhal jaundice and to add to these reports the author is presenting eighteen cases of so-called catarrhal jaundice occurring in the winter of 1922-1923, in the hope that it will add something to our present knowledge of this disease.

All of these cases occurred during an epidemic of mild influenza and all but three had a definite history of acute infection of the upper respiratory tract. Of the latter, one gave a history of bronchitis of six weeks duration. In this case the early symptoms of a typical catarrhal jaundice appeared, followed in two days by an acute appendicitis. The other two cases occurred in infants, one eleven and the other fourteen months of age. Neither developed an influenzal infection but in both families influenza had been present. In the first case symptoms of catarrhal jaundice developed at the time of recovery of one of the other children from an attack of influenza. In the second case three members, including the mother who was nursing the child, had had influenza within two weeks prior to the onset of symptoms in the patient.

Of the remaining cases, seven followed an attack of influenza within one week, three gave a history of persistent "head colds" lasting about ten days before the symptoms of catarrhal jaundice appeared, while in five cases onset was delayed from four to six weeks after the influenza, with a history of persistent sore throat and tonsillitis in interim.

The ages varied from eleven and fourteen months to forty-two years. Three cases were below five years, three from five to ten years, seven from ten to twenty years, one thirty-two and another forty-two years; of these, five patients were females and thirteen males.

Ten of the patients were school children, four in high school, three each in different grades of the public school, and one each in

three country schools. Two school teachers, one banker, and three farmers made up the balance of the patients observed. Two of the cases occurred in the same family otherwise they were all sporadic.

The onset in fourteen cases began with anorexia, a bad taste in the mouth and furred tongue, followed in six by nausea, vomiting and prostration. Four came to the office because they had friends tell them they were turning yellow. However, after inquiring carefully into these cases a history was elicited of a temporary gastric upset, occurring from five to seven days prior to the appearance of the jaundice. All of the patients noticed pain of a moderate intensity over the region of the liver extending toward the center of the abdomen.

The jaundice occurred from three to ten days following the beginning of symptoms. It varied in intensity from a slight tinting of the eyes and mucous surfaces in one of the infants, to a deep yellow. The temperature was increased in only five cases, the highest recorded being 102 degrees. The pulse rate was increased slightly in four cases and slowed in five, the lowest being 52 in a patient twenty-six years old.

In every case there was a marked constipation; in two patients, however, there was a diarrhoea at the onset lasting about forty-eight hours, followed by constipation. The color of the stool was lighter than normal in all, varying from a slate gray, to a light yellow. In twelve cases there was a total absence of bile pigment. The urine was of high specific gravity, cloudy and bile was present. Three cases only, gave a positive albumin test after centrifuging, and no casts or blood cells were found in examination of the sediment.

There was a normal white cell count in eleven cases. The patient developing the acute appendicitis had a leucocytosis of 16,400. Two other cases, both with chronic tonsillitis, had counts of over 9,000. No cases with leucopenia were found.

Gastro-intestinal symptoms of anorexia, nausea and vomiting and hepatic tenderness persisted from two to five days after the beginning of the icterus. In all the cases there was an aversion to heavy, rich foods, especially to meats and meat products. Pruritis was noted in only one case, this being slight and lasting but two days.

The liver was palpable in from three to five days after the onset of the first symptoms. It varied from just below the costal margin to seven cm. below. The consistency was normal. Tenderness was found in all cases which disappeared in all but one case after the symptoms began to clear. This case had as a complication a mild inflammation of the gall bladder, which had to be drained before amelioration of symptoms was noted. The spleen could not be palpated in any case and no tenderness was elicited over its area.

Duration of these cases of catarrhal jaundice from onset of the gastro-intestinal symptoms to disappearance of the icterus varied from ten days to four weeks, with an average length of sixteen days. One case had a recrudescence of gastric symptoms after the disappearance of the icterus following a dietary indiscretion. This lasted but four days.

Blumer⁽¹⁾ in a recent publication considers catarrhal jaundice as only a sporadic type of infectious jaundice. He states that it has been generally assumed that the type of infectious jaundice which occurs in this country is an infection with spirochetes, but goes on to prove that this assumption is unwarranted. He concludes, in this regard, that spirochetosis icterhemorrhagica (Weil's disease) does occur in this country but the common nonfatal infectious jaundice is not of this nature. Lippmann⁽²⁾ defines catarrhal jaundice as a jaundice varying in character, usually non-acute and of an infectious nature. In this definition icterus by mechanical displacement; or through abnormalities in formation of bile; with involvement of other organs (hemolytic jaundice); and the acutely febrile form associated with nephritis (Weil's disease) have been eliminated.

Many attempts have been made to determine the infectious nature of catarrhal and infectious jaundice but to date no specific organism has been isolated. In reviewing the literature it appears that the type of cases can be classified into a true infectious jaun-

dice, in which the organism or virus is unknown, and a jaundice similar in every way except the organism causing this infection is one present in the body at the time of the infection, which would be defined as catarrhal jaundice and in no way etiologically associated with true infectious jaundice.

COLON TYPHOID INFECTION

Lippmann⁽²⁾ in a study of a group of cases found five caused by the colon typhoid group. In three the bacillus paratyphous B was found both in the blood and in the stool. The other two cases differed somewhat clinically from the usual catarrhal jaundice cases. He concludes that only a minority (10%) of cases of catarrhal jaundice were caused by an agent of the typhous group.

Henkelom⁽³⁾ reports two cases of typhoid fever with jaundice. One case was a man forty-four, in which typhoid bacilli were found in the blood, urine and feces. The other case he used to illustrate the fact that icterus, by blocking the bile ducts, may mark typhoid fever. Four days after the appearance of the icterus, an ascaris was discovered. Blood examination, however, revealed the presence of typhoid fever.

Sacquepee⁽⁴⁾ discusses typhoid and paratyphoid jaundice. He divides the jaundice into several forms; one of which assumes the form of a typhoid or paratyphoid fever complicated by a jaundice. A second form, he states, has two distinct febrile periods, one of which is associated with jaundice, and the presence of the *B. typhosus* during both the febrile paroxysms leaves no doubt as to the nature of the disease. Another group with a less definite symptomatology includes cases assuming the type of a rather severe form of catarrhal jaundice, such as sometimes occur in epidemics. He states that Cantacuzene administered cultures of the paratyphoid B bacilli to several men, one of whom developed a typical jaundice forty-eight hours later.

Carati⁽⁵⁾ states that the role of the bacilli of the colon-typhoid group in the genesis of primary icterus has assumed great importance during the last few years. He has reported several cases of this type. He describes a new type of bacillus which belongs to the colon typhoid group, which was isolated from a human case of typical jaundice.

Guinon⁽⁶⁾ reports two cases of infectious

jaundice of paratyphoid origin. Two children, brother and sister, were affected a week apart by a febrile disease resembling typhoid fever which was complicated by jaundice.

Lemierre⁽⁷⁾ reports a case of a woman of benign infectious icterus of typhoid form. A culture of the patient's blood on the sixth day of the disease yielded a paratyphoid B bacillus.

Carnot and Weill-Halle⁽⁸⁾ had occasion to observe a small local epidemic of infectious jaundice occurring in a large family where six brothers and sisters living together were successively infected within twelve to fifteen days. Two other cases in two children infected from the same source occurred after twelve to fifteen days. The stools of five of the patients contained microorganisms of the typhoid and paratyphoid group but not agglutinating with the typhoid or paratyphoid A and B. They believe this organism to be an icterogenous variety of the paratyphoid bacillus, differing by its clinical electivity for the biliary tract.

INFLUENZAL INFECTION

Bronson⁽⁹⁾ reports a series of cases in children associated with influenza. He divides his series into twelve cases in whom children were exposed to influenza, but had not had the disease in its usual form; three cases in whom it followed a typical attack of influenza; four cases of doubtful association of influenza and jaundice.

Guthrie⁽¹⁰⁾ in a review of epidemic catarrhal jaundice writes that the influenzal bacillus has been blamed by Meinert, Brunler and Bonome and has been actually found by the last named in the blood, spleen and liver of two children.

Calvert⁽¹¹⁾ describes seven cases of catarrhal jaundice occurring within six weeks, all young people. Five of the cases were within one family but at different periods of time. Case 1 developed apparent influenza with jaundice appearing three days later. Cases 2 and 3 also developed at first, symptoms of apparent influenza with symptoms of jaundice appearing later. The other cases were contacts with no previous symptoms of influenza.

MISCELLANEOUS INFECTIONS

Osler⁽¹²⁾ in a note on acute infectious jaundice reported one case from North Carolina

in which the *B. proteus* was found, and that Jaeger found the same organism in two out of three cases which he studied. He also stated that the organisms of the colon group have been found.

Randolph⁽¹³⁾ describes four cases in one family living on a farm. These cases all occurred within a period of three weeks. He states the only source of water was from a well thirty-six feet from a parish church yard. A bacteriological examination of the water showed *B. coli* over 1,000 per liter and streptococci over 10,000 per liter.

Dalglish⁽¹⁴⁾ reported an epidemic of catarrhal jaundice occurring during the winter of 1900-1901. This epidemic appeared at the same time as enteric fever and dysentery. However, the epidemic of enteric fever occurred every fall with the rains, but that winter was the first appearance of jaundice. He believes this epidemic due to the germ of enteric fever and supports this belief by giving examples of the infection intermingled with the other forms prevalent. As instances: a father had jaundice while his two children had enteric fever; a husband had enteric fever while his wife had jaundice; a brother had enteric fever while another brother had jaundice and a sister had dysentery; a mother had jaundice while her child had enteric fever; in a boarding house in three months there were seven cases of jaundice, five cases of enteric fever and three cases of dysentery.

Etienne and Masson⁽¹⁵⁾ report a case of pneumonia of the left upper lobe, in the course of which, on the ninth day a rather intense icterus made its appearance. The seroreaction was positive for Eberth's bacillus.

Izard⁽¹⁶⁾ reports a case of icterus at the beginning of an atypical scarlet fever. The patient first presented a few erythematous spots on the face and the upper part of the chest with a rise in temperature. The next day the eruption disappeared but with persistent symptoms of beginning jaundice. A serious jaundice remained for a few days. During convalescence, thirty-one days from onset, a typical scarlet fever erythema made its appearance.

Sacquepee⁽¹⁷⁾ describes a case of streptococcic septicemia, with an appearance of icterus at first moderate, later generalized, with severe general symptoms. He describes the case as one of severe streptococcic icterus

presenting the clinical formula of acquired hemolytic jaundice.

Several authors have observed a pharyngitis during epidemics of catarrhal jaundice, among these being Poignand⁽¹⁸⁾, Cockayne⁽¹⁹⁾ who also reports from Poinard and Gibson. None of these authors attempted to determine the infectious nature of the pharyngitis, so no classification of a definite type of infection can be made.

COMMENT

The author believes there is a specific type of infectious jaundice. On the other hand, he believes there are a large group of cases that have a varied etiology. He has presented a group of cases of catarrhal jaundice preceded by influenza. He believes that the organism or virus causing influenza is also the etiological factor for the subsequent jaundice. From reports gathered from the literature it is probable that catarrhal jaundice follows many other types of infection.

From this he would divide infectious jaundice into two groups. 1. Specific infectious jaundice, due to a specific organism or virus at present unknown, and—2. A non-specific, or catarrhal jaundice, caused by known and varied infections.

BIBLIOGRAPHY

1. Blummer, Geo.: Infectious jaundice in the United States; *Journal A. M. A.* 1923; 81; 353.
2. Lippmann, A.: Zur Pathogenese des Icterus catarrhalis; *Med. Klin.* 1922, xviii, 1176.
3. Henkelom, von A. S.: Two cases of typhoid fever with icterus; *Nederland Tydschr. v. Geneesk.* 1922; lxxvi, 801-809.

4. Sacquepee, E.: Typhoid and paratyphoid jaundice; *Paris Med.* 1923; xiii, 494-501.
5. Carati, E.: Recherches sur un bacilli du groupe colityphique isole dans un cas d'ictère infectieux benin; *Arch. d. Mal. de l'appareil digestif* 1914; viii; 421.
6. Guinon, L.: Deux cas d'ictère infectieux d'origine paratyphique observe's simultanement, chez deux enfants, frere et soeur; *Bull. et mem. Soc. med. d. hop. de Par.* 3. s. 1910; xxx; 584.
7. Lemierre, A.: Icterus infectieux benin d'origine paratyphique; *Bull. et mem. Soc. med. d. hop. de Par.* 3. s. 1910; xxx; 561.
8. Carnot, P. and Weill-Halle, B.: Etude clinique et bacteriologique d'une petite epidemie d'ictère infectieux; *Bull. et mem. Soc. med. d. hop. de Par.* 3. s. 1915; xxxix; 377.
9. Bronson, E.: Catarrhal Jaundice associated with Influenza in children; *Brit. Journ. Child. Dis.* 1919; xvi; 73-78.
10. Guthrie, L.: Epidemic Catarrhal Jaundice; *Brit. Journ. Child. Dis.* 1913; x; 1-8.
11. Calvert, W. H.: Epidemic Jaundice; *Brit. M. J.* 1894; i; 239.
12. Osler, Sir Wm.: Note on Acute Infectious Jaundice; *Lancet* 1915; ii; 605.
13. Randolph, Chas.: Epidemic Jaundice; *Brit. M. J.* 1912; ii; 1547.
14. Dalglish, J. W.: An epidemic of Catarrhal Jaundice probably due to the Enteric fever bacillus; *Lancet*; 1901; ii; 523.
15. Etienne, G. and Masson.: Un cas d'ictère catarrhal eberthien sans fièvre typhoide; *Rev. med. de l'Est.*; 1911; lxiii; 43.
16. Izard, L.: Ictère et scarlatine; *Progres. Med.* 1923; xxxviii; 208.
17. Sacquepee, E.; Ictère grave streptococcique; formule sanguine des ictères hemolytiques acquis, avec granuleuse retardee; *Bull. et mem. Soc. med. d. hop. de Par.* 1909; xxvii; 164.
18. Poignand, R. N.: Catarrhal jaundice occurring in epidemic form; *Brit. M. J.* 1912; i; 72.
19. Cockayne, E. A.: Epidemic Catarrhal Jaundice; *Lancet*; 1914; ii; 218.

SOME INTERPRETATIONS OF CARDIOVASCULAR SIGNS*

Stanley Clements, M. D., Lincoln, Nebr.

In taking up the subject matter of my paper, I wish to put before you the cardiovascular system in a broad sense, believing that physiological considerations must be the essential basis for the correct interpretation of physical signs, some of which I shall develop in considering the heart.

The circulatory apparatus is adapted primarily to maintain capillary flow. The regular beating of the heart, the elasticity of the arteries, the peripheral resistance of the arterioles, the mechanism by which the venous

blood is returned to the heart, all serve no useful purpose in themselves, but are adapted and coordinated to keep up the constant stream of blood in the capillaries. Thus heart failure sufficient to cause passive congestion of the viscera is of significance because the stasis of the blood in the capillaries interferes with the metabolic activities of the organ involved. The flow of blood in the capillaries, therefore, is a measure of efficiency of the circulation and should be of interest to us from that point of view alone.

Not alone heart failure, but any break in

*Read before the Lancaster County Medical Society, February 2, 1924.

the cardiovascular chain, gives definite pictures that too often are lost sight of in our search for things obscure. I am convinced that the art of observation must be emphasized in every day work, else that art so highly developed by some of our old master clinicians will be lost. In this I do not wish to be misunderstood: so long as we consider human body a cellular composite, and the action of those highly specialized cells gives us a definite physiological chemistry, we must use our laboratory also, in conjunction with our observations, in arriving at definite conclusions.

In the examination of the chest wall for evidence of cardiac involvement a definite, well-laid typography is to our advantage. I believe that the accurate location of the apex impulse of the heart is one of the most important signs in judging heart pathology, and that, therefore, a technique based upon the two fixed points over the chest wall that are constant, is most worthy of consideration.

In relation to the heart location, one fixed point over the chest wall is found 2.5 centimeters to the left of the median line, anteriorly, at the second interspace. It is here that the great vessels have their attachments, and no matter if the heart be enlarged or displaced, these attachments are anatomically constant. Another fixed point is the sternum in its relation to the apex impulse, it being accepted that the normal apex impulse is found 6.5 centimeters to the left of the sternum, in the fifth interspace. A line drawn between these two fixed points, from the second to the fifth interspace, represents the long axis of the heart.

Other typographies, such as one and one-half inches below and one inch to the right of the nipple for the apex beat, are subject to much variation. Any deviation from the 6.5 centimeters measurement above mentioned will give a definite information of hypertrophy, dilatation, or displacement from causes, not only within the heart, but causes within the chest cavity, such as tumor, fibroid lung, etc. I am convinced that the character and position of the apex impulse will give greater information as to cardiac conditions than any other one thing.

Our present day thinking in cardiology lays great stress upon heart function — a rational position. In other words, is the heart

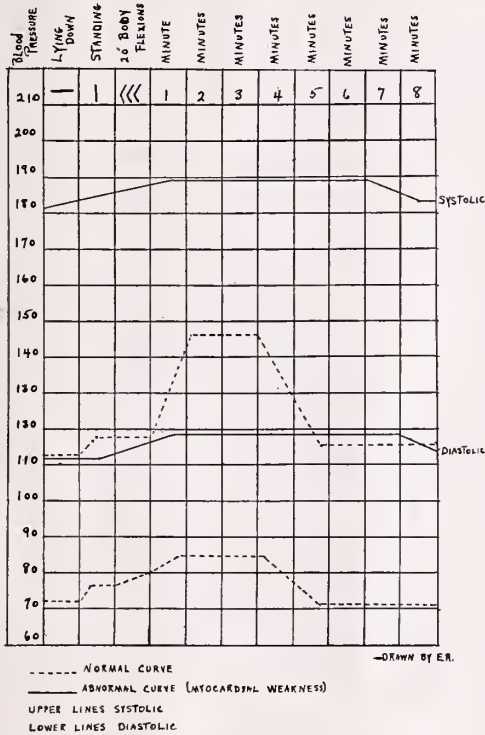
capable of sustaining the circulation necessary for metabolic and catabolic interchange? How much reserve force has it, either in health or disease? What simple method may be used to detect this with a degree of accuracy?

I believe a little consideration of blood pressure readings will be of advantage. Briefly, systolic pressure represents left ventricular contraction. Diastolic pressure represents maintenance of arteriole pressure when the aorta valve is closed. Pulse pressure is that range of arterial pressure between systole and diastole representing volume output following systole.

Normal limits of pressure have been determined for individuals of different ages. For example, a man thirty years of age is expected to have systolic pressure of 120; diastolic pressure, 80; pulse pressure, 40. From the law of averages this is normal. It will be seen that any deviation from this reading will lead one to a myocardial or arterial consideration. Case: a man of thirty, S. P., 180. D. P., 90; P. P., 90. Under these conditions, the heart will be found laboring under a pulse pressure requiring the use of its compensatory functions, dilatation or hypertrophy, to meet the pulse pressure or volume output. If the overload becomes excessive and the heart begins to fail, pulse pressure will fall at the expense of systole. For example, an advanced arterio-sclerosis or chronic interstitial nephritis with a S. P. 180-200, D. P. 110-120, is frequently seen. In such cases, when the heart begins to fail, the S. P. begins to fall while owing to rigid arteries and an increased pulse rate occasioned by a dilated heart, the D. P. may remain high, and as a result the P. P. falls.

The record of a number of normal cases verifies Martinet's estimate of blood pressure in relation to heart function. The following procedure develops interesting pictures. In a normal patient a rise from the horizontal to the vertical position gives an increase of 5 mm., both systolic and diastolic. Twenty body flexions increase the systolic pressure 40 mm., diastolic, 10. These readings return to normal in less than three minutes. In a patient of known heart weakness, a rise from the horizontal to the vertical position gave no rise of systolic pressure, while the diastolic pressure rose 10 mm. or more. Twenty body flexions gave slight systolic rise, but marked diastolic rise, and

these changes persisted for ten to fifteen



minutes before returning to normal levels for the individual.

The above test, simple in its procedure, will throw much light upon borderline cases. Under cardiac failure of marked dyspnea, edema, etc., these cases should be approached with care; in fact, this test is not then necessary.

In the accompanying diagram I illustrate a normal and an abnormal curve of systolic and diastolic pressure, with a normal and an abnormal myocardium, respectively, the latter showing dilatation. It is most interesting to note the change of the systolic curve as the patient is recovering, a change that to one interested in cardiovascular work will be most gratifying, showing conclusively the relation between blood pressure and myocardial weakness.

Let it be known that in offering this paper I am not presenting all points necessary in the diagnosis of myocardial weakness, but only three considerations, namely: (1) Visualization of the normal physiology of the cardiovascular chain, especially its mechanical side; (2) measurements from definite fixed points on the chest wall in the examination of the heart; (3) the use of blood pressure readings as valuable indices of myocardial weakness.

THE GLANDS OF INTERNAL SECRETION*

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The recent ludicrous advertisements and supposedly authentic articles in the public press upon "Glands" are concerned with what the scientific students of this subject call glands of internal secretion (endocrines). These glands secrete their mysterious products directly into the blood stream and differ from glands of external secretion—salivary and sweat glands—in that the latter have a duct carrying the secretions outside of the blood stream and tissues. Just when these glands originated in the animal's climb up the biological scale no one knows, but it is very plausible to assume that at various stages certain structures were added requiring regulation to the presence of the preceding development.

Man happens to be what he is through (1) heredity and (2) environment; he inherited a mass of selected and differentiated vital tis-

sue (nucleated protoplasm) and through the ages, with the influence of his surroundings, added new structures, or in other words automatically adapted himself to new environments. If it had not been for heredity, which kept handing down a foundation, environment would have had nothing to work upon. If it had not been for environment, the original foundation handed down by heredity would never have been changed. There is no conflict between heredity and environment, both are dependent upon the other. In studying any one given species, however, heredity is more important; in studying the ascent from one species to another, environment is more important.

Man differs from the lower animals in having a higher developed voluntary nervous system in his skull. He has paid for his higher psychic development in a loss of (1) lower mental function (instinct), and (2) physical development. All the higher vertebrate animals, (those with a spinal column) which

*Lecture delivered before several non-medical groups of men and women during 1923 with the sole idea of propagating proper publicity of medicine. It is submitted merely as an example of what many of the profession might follow for the sake of clean medicine.

includes man, are quite similar in structure and function, man's only differentiation being his brain power. These higher vertebrated animals, biologically speaking, can be described as being endowed, from heredity and environment, with a protoplasmic foundation, (vital tissue), activated and co-ordinated by a more highly differentiated electro-conductive protoplasm (the nervous system), and characterized by another selected and differentiated protoplasmic tissue arranged in various cell groups which we call glands. A man's characteristics, therefore, depend considerably upon his glandular development.

Just so as we have two types of glands, those of external and those of internal secretion (endocrines), we have two types of nervous systems, the voluntary and involuntary (automatic). The involuntary or automatic nervous system animal life possessed first, and it is beyond voluntary control; it is sometimes called the vegetative nervous system. It regulates the activities of all glands and it is impossible to study them without studying the automatic nervous system with them: in other words, glands would not function without the automatic nervous system. So precise is the interplay in function with almost infinite complexity that it appears beyond the grasp of human imagination. The influence on the body of these glands and the automatic nervous system, begins in intra-uterine life and extends all through the later life of the individual. The nervous system, through its ability to transmit stimuli so rapidly that we are considering it as electro-conductive tissue, provides for the necessary rapid co-ordination and adjustment of single and multiple parts of the body. The glands (endocrines) by means of their chemical secretions, which empty directly into the blood, render parts of the body, including the other glands not primarily stimulated, more susceptible to the influence of the automatic nervous system. Therefore, one must keep in mind that the automatic nervous system and the endocrines are one and a part of the same system. This has a most important bearing on the conclusion of this article.

One of the many great problems the studious man in medicine has to recognize today,—and no other man has greater problems—, is the normal and abnormal interplay of this automatically controlled glandular and nervous system (neuro-glandular

vegetative system). Evolution, revolution and dissolution of all living things upon the earth depend entirely upon the glandular and nervous systems. As life, physically, becomes more comfortable, vocations and avocations easier of pursuit, man has a keener desire to live longer and seeks the "elixir of life," from most anywhere it is advertised. It is most unfortunate, either because we have not evolved enough or dissipated too much, that these intricate problems in biology must be commercialized by the public press, as it is from just such unfounded sources that the public pin their faith and upon which the charlatan sells his wares. The problem of the true physician (student of human biology) cannot be compared with the mercenary attitude of the ignorant cults and charlatans, who prey upon mental impressions, having no idea of the fundamentals of the functions of the body, bringing only momentary mental relief at the expense of permanent bodily damage upon which the deceived mentality must later depend.

TYPES OF GLANDS.

The glands of internal secretion named in order of their vital importance to the body are (1) the adrenals, (2) internal secretory portion of the pancreas, (3) the parathyroids (4) the thyroid, (5) the pituitary, (6) the sex glands, (7) the spleen, (8) the pineal, (9) the coccyeal, (10) the carotid. This might require a more or less reversal in order, among the first five, the lower the animal descended the scale. The first five glands are the only ones with prominent influence and will be briefly considered separately.

The adrenal endocrines, one resting upon the upper surface of each kidney are the "tonic glands" of the system. They keep the nervous system toned up and the body ceases functioning a few weeks or months after their destruction. They are the most "vital" of all internal secretory glands.

The endocrine portion of the pancreas (the large digestive gland) regulates sugar chemistry, furnishing help to the liver so that carbohydrates, sugars and starches can be burned up or stored away. A destruction of this internal secretion we know produces diabetes so its presence is most essential.

The parathyroids are a group of, generally, four small, pea size glands, lying behind the thyroid gland. They regulate calcium metabolism, changing in some way, apparently,

an inorganic form of calcium to a more organic form in order that the nervous system may use it for a regulation of its activity. When these glands are injured or destroyed, spasms are produced in the extremities, particularly in the hands. They are very small glands but very important in the regulation of the nervous system.

The thyroid endocrine is the "pep" gland of the body, regulating gaseous exchange (energy) in the tissues. Without this gland the baby becomes deformed and undeveloped, the adult thick-skinned, losing mental and physical vitality. Diseases of this gland, during which it enlarges, are spoken of as goiters. A goiter, therefore, is merely an abnormal enlargement of a normal endocrine. There are different types of goiters requiring different types of treatment.

The one pituitary gland lying inside the skull, just behind the orbits (eye sockets) has a poorly understood muscular tonic influence in the body. When overdeveloped in a child, it produces overgrowth or gigantism—the giants in sideshows are pituitary gland products. If the gland overdevelops in the adult, we have a condition resulting which is known as acromegaly wherein the features and extremities enlarge. These varying influences in varying degrees are

present in everyone so that an observer can observe in every adult signs of hyper, hypo and normal pituitarism. Few are normal or perfect.

The sex glands are merely for demarcation of type and propagation of species. Little is known about their internal secretions—they both possessing external secretions in addition. In other words they are double acting and occupy considerable prominence owing to the basic influence of the sex question. Of all the glands of internal secretion these can be most, but are the least controlled by the voluntary nervous system.

In conclusion, I wish to state that glands of internal secretion, in order to function must have an arterial and venous blood and lymph supply in addition to an automatic nervous supply. In order to transplant one of these glands from one body to another for permanent function it would be necessary to connect up the arterial, venous, lymphatic and automatic nervous channels, which to date has been an impossibility. Feeding these secretions by mouth has no effect. Beware of any individual advertising the sale of gland extracts as they are either ignorant of the subject or are simply trying to deceive the public.

ALKALIES AS AN ADJUNCT IN SEPTIC SURGICAL CASES

L. E. Penner, M. D., Beatrice, Nebr.

The conditions which call for alkalies are numerous but must have one underlying cause, namely, a lack of alkalinity of the blood and tissues.

This condition is sometimes due to the abnormal production of acid bodies as we find the acetone and diacetic acid poisoning in diabetes and starvation.

Again it may be due to the failure to eliminate from the blood acids and toxic substances which are normal products of metabolism, causing a lack of alkalinity of the blood and resulting in a condition known as uremia.

A disturbance in the alkaline balance may also result by the excess of intake of acids either through the lungs, skin, or gastrointestinal tract.

Again we know that ether as an anesthetic will lower the alkalinity of the blood the same as many septic conditions of the system.

A severe loss of the alkaline balance is commonly called acidosis. The exact method of determining this condition is by means of the Van Slyke apparatus and method and the determination of the carbon dioxide combining power of the blood.

For practical purposes the examination of urine may be used as an indicator, if the day urine is acid and the night urine highly so, you will have a fair reason to expect a normal loss of alkalinity of the blood.

The symptoms which would lead one to suspect acidosis are deep, labored breathing, a tendency to become comatose, and a feeling on the part of the patient of impending death. To overcome this loss of alkalinity of the system, alkalization of the patient is necessary as soon as the condition is recognized. This is best accomplished by giving soda bicarbonate in large doses, sixty grains, four or five times daily, well diluted by mouth until the urine is alkaline to litmus

paper. The dose should now be decreased but the urine should be maintained alkaline for a week.

If the patient is unconscious a stomach tube may be used to good advantage. In cases where the patient is nauseated or for any reason where liquids by way of the stomach are contraindicated, as would be the case in local or traumatic peritonitis, a three per cent solution of sodium bicarbonate in gallon quantities may be used as enemas every four hours till desired results are maintained. A five per cent solution as proctoclysis by the Murphy drop method is of some help and may guide the patient over the critical period. The intravenous method I have never used.

Other drugs, such as the magnesia, lithia and potassa salts, may be given with the best

results and magnesia ponderosa, in particular, fulfills the double action of alkalization and an efficient laxative.

That acidosis has been the cause of many deaths following operations on septic subjects is to my mind above dispute, but that milder varieties of alkaline disturbances if detected and corrected in time, may be the means to an uneventful recovery is my belief.

Doctor A. J. Ochsner, in "General Surgery of 1922"* writes the following: "Acidosis has been the cause of many fatalities following both minor and major procedures. For many years it was supposed that the patient died from sepsis but now we know acidosis was the cause".

*Page 54.

CASE REPORT OF PREGNANCY COMPLICATED BY A LARGE OVARIAN TUMOR, WITH PLEASING END RESULTS*

Earl C. Sage, M. D., Omaha, Nebr.

Mrs. E. L. L., aged 23, gravida III, consulted me in her sixth month of gestation, weighing 213½ pounds on Jan. 15 1924. When she was married, five years previously, her weight was 135 pounds,

was unusually large, due either to multiple pregnancy, hydramnios, or ovarian cyst. The abdomen measured 125 cm. around the umbilicus on Jan. 15, 1924. On March 4, the same measurement was 139½ cm.

Her pelvic measurements were large—interspinal 29 cm.; intercrestal 33 cm.; bitrochanteric 25 cm.; external conjugate 35 cm.; diagonal conjugates 24 cm.; biischial 11.5 cm. and internal conjugate 12.5 cm. (Justo-major pelvis.)

She had had one seven month miscarriage during the first year of married life, then a normal full



Fig. I. Patient weight 221 lbs.—139½ cm. around umbilicus. A patient with twins at full term measures 110 cm.

but of late her usual weight was about 185 when not pregnant.

Upon examination it was seen that her abdomen



Fig. II. 5 lb. baby girl; 4 weeks premature.

term baby, now 21 mos. old. Her last menstrual period was July 5, 1923, making her due April 12, 1924.

However on March 4, 1924, the distension of the abdomen was getting so great that there were small ecchymotic spots in the skin over the upper abdomen. The patient complained of this weight due

*Read before the Wise Memorial Hospital Staff Meeting, Omaha, March 3, 1924.

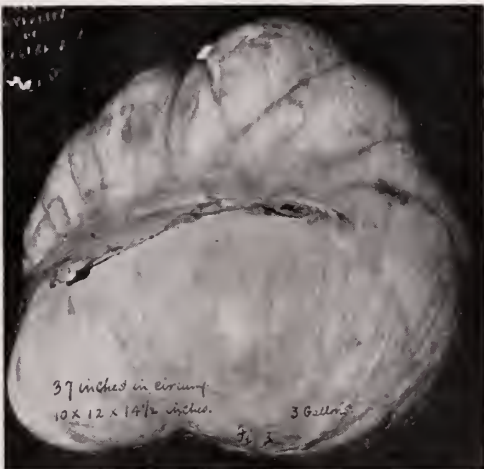
to the excessive size of the enlarging abdomen as the picture will best illustrate. (Fig. I). She was somewhat short of breath on exertion and had some swelling of the legs with a trace of albumin in the urine. Her blood pressure was normal (120-60).

She was quite willing to have labor induced on March 9, 1924, at which time (9 A. M.) the membranes were ruptured with only the escape of a normal amount of fluid during the day. As the patient lay on the table it was discernible that there was a little more fullness in the right lower quadrant of the abdomen extending from about the left anterior superior spine diagonally upwards about $\frac{1}{2}$ inch to the left of the umbilicus where this fullness blended in with the remainder of the abdominal distension.

The percussion note was about the same over the entire abdomen and was not influenced by changing the patient's position; it was more dull in the right flank and somewhat more tympanitic in the region of the costal borders and ensiform cartilage.

From these physical findings it was my opinion that we were dealing with a large ovarian cyst of the right side pushing the pregnant uterus to the left and posteriorly.

Toward late afternoon of the same day, uterine contractions were quite feeble, every 10-15 minutes. During the early evening, the patient was up walking and the pains were closer together. They increased in frequency and severity so that patient had a spontaneous delivery at 3 A. M., March 10th. The placenta did not come away, but there was but little bleeding so two hours elapsed before it was decided to remove it by introducing the hand into the uterine cavity to aid the separation. This was done under nitrous oxide-oxygen anesthesia.



(Fig. III.)

The placenta peeled away without difficulty and under the anesthesia the diagnosis was confirmed as to the location of the uterus and the presence of the ovarian tumor, as a thick pedicle could be palpated springing from the locality of the right broad ligament.

The baby girl weighed 5 lbs. and made an uneventful recovery, although she was about four weeks premature. (Figure II).

The circumference of the abdomen only decreased $19\frac{1}{2}$ cm. after the delivery of the products of con-

ception. It was 120 cm. or 10 cm. larger than a mother with twins at full term.

The mother had an uneventful puerperum and it was decided on her 10th postpartum day to make an exploratory incision in the right lower quadrant of the abdomen and see whether or not we had a cyst to deal with.

OPERATION

On March 19th—10th postpartum day—under local anesthesia a four inch incision was made through



Fig. IV. 11th Postoperative Day.

the thinned out abdominal wall in the right lower quadrant of the abdomen, through the various layers to the peritoneum. On section of the peritoneum, the thin walled cyst lining presented itself and our diagnosis was confirmed. With a trocar the fluid was then evacuated slowly, taking about forty minutes to empty three gallons of a light straw colored fluid.

The patient was not at all apprehensive about the whole procedure and this factor was a great aid to us. She was digitalized the day before the operation following the suggestion of Geist and Goldberger of giving $1\frac{1}{2}$ grains digitan per 15 lbs. weight during the 24 hours before operation and then every two hours until the entire amount is taken. (Annals of Surgery. Dec., 1923, page 693.) The patient also received $1\frac{1}{2}$ scopalamine hypodermically one-half hour before the operation. With this preoperative medication and the local anesthetic, 1% novocaine with 10 drops 1:1000 adrenalin to the ounce, she was very comfortable even after the fluid had been removed, and the pedicle of the cyst was located, ligated, clamped, cut and removed. No intestinal coils were adherent. The appendix lay in the operative field; the patient was asked if she wished to have it removed, she replied in the affirmative and a routine appendectomy was performed. The peritoneum, fascia and skin were closed in layers with two silkworm gut tension sutures tied over a small gauze roll.

The cyst measured 97 cm. or 37 inches in circumference, with the other dimensions being 24-32-37 cm., or 10-12-14½ inches respectively. (See Fig. III.) The right Fallopian tube is attached.

The highest postoperative rise in temperature was 100.8 which occurred on the 1st postoperative day; 99.2 on the 2nd day, and normal thereafter. Patient made an uneventful recovery, was up on her tenth day, at which time the sutures were all removed, with a little serous discharge at the upper end of the incision.

She was given hot sterile douches toward the end

of her stay in the hospital to favor the involution of her uterus; she nursed the baby every day and left the hospital on March 30th four weeks after the baby was born, a very happy, grateful patient. (Fig. IV.)

She reported in to the office April 10th. Weight 160½, uterus well forward and involuted, very comfortable, having had a corset fitted to her when she was at the hospital to give her the abdominal support she would necessarily be in need of.

—520 Bankers Reserve Life Bldg.

CASE REPORT: LARGE OVARIAN CYST

Max Emmert, M. D., F. A. C. S., Omaha, Nebr.

Patient L. C., aged 21, school teacher, was referred from Iowa complaining of marked increase in the size of her abdomen.

P. H. Patient had had rheumatism at the age of 12. No other serious disease. Menstrual life began at 13 and never caused any inconvenience. At the age of 14 while playing she was pushing against a piece of wood with her abdomen and felt something give way. The abdomen was sore for several days.

P. I. Began in May, 1923, when the patient noticed an increase in the size of her abdomen. This increased rapidly in size until June, since which time there has been no marked change. The patient has never had any digestive or menstrual disturbance. No pain of any kind. She has noticed dyspnea on exertion and that she tires easily.

Physical examination revealed a happy, well nourished young woman. Tonsils were large but not active. Lungs clear. Heart slightly enlarged to the right. Marked systolic murmur in the mitral region transmitted. No evidence of broken compensation. Marked uniform distention of the entire abdomen. Abdominal walls tense, no points of tenderness. No tympany could be elicited on percussion except low in the flanks. No shifting dullness or increase of tympany with patient in lateral position. Vaginal examination—negative. Urinary and blood examinations—normal. Clinical diagnosis: Encapsulated fluid, probably cystic ovary.

Under local anaesthesia a midline incision was made exposing a thick bluish wall, into which an aspirating needle was inserted and seven quarts of a viscid light brownish fluid was removed. Traction on the wall caused pain so the patient was given gas. Strong traction not producing results the hand was inserted into the abdomen and a hard mass the size of an orange was felt in the right kidney region attached to and incorporated in the cyst wall. This was delivered with little difficulty allowing the entire cystic wall and mass to be delivered outside the abdomen. The lower pole was attached to the right broad ligament and was easily sectioned without opening the cyst. No evidence of more ovarian tissue in the normal position. Abdomen closed. Patient had one-half hour of gas.

The cyst, after removal, contained one and one-half quarts of fluid making a total of eight and one-half quarts. The mass at the upper pole was gelatinous in character, containing many cavities filled with viscid fluid. No gross evidence of normal ovarian tissue.

Pathological report—The ovarian stroma showed a rather decided, though localized areas of connective tissue overgrowth, and interspersed in the stroma were numerous large cysts lined uniformly with a single layer of columnar epithelium. Diagnosis, cystic ovary.

The patient made a nice recovery and returned home on the eighth day. A report from her stated that she had lost forty pounds while in the hospital.

This case is of especial interest because of the age of the patient, the development of this enormous tumor without pain or discomfort.

An interesting point is whether or not the injury fourteen years before had any influence in activating a congenital condition.

—446 Aquila Court.

TREATMENT BY NEGLECT

Theodore Diler, Pittsburgh (Journal A. M. A., Dec. 22, 1923), is of the opinion that there are patients who are examined far too much. The self-centered psychoneurotic delights in examinations, reexaminations and more examinations. And in these days of many clinical procedures and manifold laboratory tests there is great risk of overexamining certain of these psychoneurotics. There is a judicious neglect which the physician makes in his visits. It is extremely important and necessary that enough time be given to hear the patient's story; but it is a mistake to spend time in hearing undue repetitions of this story. While the first visit may be of an hour's duration, the next one may be half an hour; and other visits of a minute and half may be most appropriate. There are times when the patient is much better visited once a week or once in two weeks rather than every other day. There is a type of psychasthenic patient that leans on drugs, on appliances or members of his family, and on his physician. He does the maximum leaning instead of the minimum leaning, and does not look forward to the time when he will not lean at all. The job of the physician is to lead him to lean less and less and, if possible, to walk alone and not lean at all.

PRESENTATION OF A CASE OF FRACTURE OF THE NAVICULAR BONE OF THE WRIST*

Joseph A. Weinberg, M. D., Omaha, Nebr.

The patient, male, age twenty-seven, was injured eighteen months ago by falling from an electric light pole. He was found to have a severe Colles fracture which was accurately reduced by his physician without resulting deformity. After several weeks the patient attempted to return to his work as an electrician, but found that he could not perform the duties of his occupation because of weakness and pain in his left wrist. Several months later a diagnosis of fracture of the navicular bone of the wrist was made. An operation was performed in which the tubercle of this bone was removed. The condition of the wrist did not improve following this procedure. When I first saw the patient, which was ten months after the removal of the fragment, his complaint was weakness in the hand, and marked pain in the wrist when the hand was flexed, extended, or abducted. Flexion and extension of the hand were greatly limited. Firmly striking the distal articular ends of the second and third metacarpal bones with the patient's hand closed elicited pain in the wrist on the radial side. X-ray examination showed rarefaction of the navicular, lesser multangular and capitate bones. There was also indication of a fracture through the body of the navicular, but this observation could not be made with certainty from the plate. A diagnosis of fracture was made, and on February twenty-third operation was performed under local analgesia induced by injecting the brachial plexus with novacaine. There was found a complete fracture through the body of the bone, with extensive rarefaction of both fragments. The bone was removed through a dorsal radial incision. The wound was closed, and the wrist was immobilized with an anterior splint. Four days later passive motion of the hand and wrist was instituted. Ten days after the operation the use of the splint was discontinued. It is now sixteen days since the bone was removed and the patient has noted a marked improvement in the wrist. He has a normal range of flexion and extension, and the pain is markedly diminished. Several weeks will be required to overcome the weakness from disuse.

This case is a typical example of the difficulties encountered in the diagnosis and treatment of fracture of the navicular bone of the wrist. The injury is usually complicated by other fractures, and for this reason the pathology is obscured. The anatomy of the wrist predisposes to injury of this bone from two sources. The more common type of fracture is that produced by the capitate bone being forced as a wedge against the middle of the distal surface of the navicular. This results in a fracture through the body of the bone and is the more serious type. The fragments undergo rarefaction, possibly because of an interference with the circulation, and fail to unite. Each then acts as a

foreign body in the wrist joint. The second type is that in which the styloid process of the radius acts as the wedge and fractures the tubercle from the body. No great disability results from this injury. Both of these injuries are produced by a fall on the outstretched hand with the forearm extended. Such an accident will usually cause a fracture of the lower end of the radius also, and since the radius deformity is the prominent symptom, the injury to the navicular bone is overlooked.

The diagnosis is usually made from the persistence of pain and limitation of motion in the wrist, and weakness in the hand. If there is a prominence on the radial side of the dorsum of the wrist, the attention will be earlier directed toward the navicular bone. If the patient is receiving compensation during the period of his disability, the attending physician may be inclined to suspect that he is exaggerating his symptoms. An early x-ray examination may fail to show any abnormality, since with the ordinary transverse and postero-lateral views the line of fracture is not prominent. In my opinion the areas of rarefaction in the navicular and adjacent bones are of more importance diagnostically than the demonstration of a line of fracture, since the rarefaction indicates that the bone is acting as a foreign body. Of course, this is of value only in chronic cases.

The treatment in the acute stage is immobilization of the forearm and hand for a period of three or four weeks. In a few cases there will be complete restoration of function with this procedure. If the symptoms persist for several months the condition may be considered chronic and open operation must be resorted to. In the chronic cases one usually has to deal with a fracture through the body of the bone. One of two courses may be followed, removal of one fragment, or removal of both fragments. One will naturally consider that entire removal of the navicular bone is a rather drastic procedure, since it articulates with more than half of the distal articular surface of the radius. It will be found, however, that the bones of the wrist soon adapt themselves to the altered anatomy, and except for a slight weakness the normal function of the

*Read at the Wise Memorial Hospital Staff Meeting, March 9th, 1924.

wrist is restored within a few months. It frequently happens that removal of one of the fragments does not relieve the symptoms of pain and limitation of motion. For this reason it is unwise to adopt the conservative

procedure. It is important to begin passive motion within three or four days following the operation in order that the function may be restored within a short time.

—512 Bankers' Reserve Life Building.

PAIN DUE TO LESIONS OF THE UROLOGICAL TRACT*

Edwin Davis, M. D., F. A. C. S., Omaha, Nebr.

For the purpose of brief consideration, the various types of pain associated with lesions of the urological tract may be conveniently divided into four anatomical groups as follows:

1. Pain associated with renal or ureteral lesions.
2. Pain associated with bladder lesions.
3. Pain associated with lesions of prostate and prostatic urethra.
4. Pain associated with lesions of the scrotal contents.

PAIN ASSOCIATED WITH RENAL OR URETERAL LESIONS

The pain known as renal or ureteral colic is as characteristic a pain as is known. With the classical description of this pain, occurring suddenly, arising in the flank or in the costo-vertebral angle, and radiating to the groin and testicle, all are familiar. This pain when typical is almost pathognomonic. It signifies distention of the renal pelvis from any one of several causes, the most frequent cause being ureteral calculus. A similar pain is produced by a blocking or a kinking of the ureter such as is the etiological factor in intermittent hydronephrosis, and is here known as Dietl's crisis. The same pain may also be produced by a simple blood clot in the ureter. Hence, any of the causes of renal hematuria might be the primary cause of renal colic, and in explaining one of these attacks of colic we should, therefore, consider the three chief surgical renal lesions producing hematuria, namely, stone, tumor and tuberculosis.

The second variety of renal pain may be described as the "dull ache" type. This pain when typical, is located in the flank or costo-vertebral angle. It is essentially chronic and more or less constant, but is increased by exertion, and particularly by any jarring movement such as automobile or horseback riding. A pain of the dull ache type is commonly produced by a comparatively large renal calculus which is not blocking the ure-

teral outlet, or by a small ureteral calculus which is partially blocking the ureter, or by a hydronephrosis.

The third type of pain produced by kidney lesions is of the abdominal type. Statistics by Cecil show that in 20% of renal lesions the symptoms are abdominal in character, and, therefore, entirely atypical.

Lastly, it is well to recall that even in case of large renal calculus, pain may be conspicuous by its complete absence. This is the so-called "silent" renal calculus, and in this connection it is well to remember the advisability of never omitting an x-ray examination in any case of gross and persistent pyuria, regardless of the absence of pain.

Before leaving the subject of renal pain, it is worth while to note that two of the chief surgical lesions of the kidney, namely, tumor and tuberculosis, are typically painless in their earlier stages, excepting that in either of these conditions, colic may be caused by bleeding.

PAIN ASSOCIATED WITH BLADDER LESIONS

Bladder pains may be conveniently divided into three main groups, caused (1) by retention of urine, (2) by infection, and (3) by foreign bodies. The pain due to retention of urine is the pain of a distended bladder, with which we are all familiar. It becomes necessary, however, to distinguish between acute and chronic distention of the bladder, for the reason that the latter type of bladder, presenting the so-called "overflow" incontinence, is quite painless, even though the bladder may be both palpable and visible in the suprapubic region.

Considering the pain due to infection in the bladder, it is important to note that we are not dealing with a true bladder pain in this instance. The chief symptom of an inflammatory condition in the bladder is frequent urination, which in severe cases may be so extreme as to amount to almost an incontinence of urine. In the more severe cases of cystitis, following urination, there

*Read before the Omaha-Douglas County Medical Society, March 11, 1924.

frequently occur exquisitely painful spasms referred to the urethra, and associated with forcible contractions of the bladder in the effort to expel the last few drops of urine.

The pain due to foreign body or to bladder calculus is typically referred to the urethra, particularly to its terminal portion, and with the act of urination there is a varying amount of straining, tenesmus and urethral pain, which may be very similar to the above described pain of simple acute cystitis. The chief distinguishing factor in the history is the chronicity associated with calculus.

Bladder tumor in typical instances produces no pain until it becomes associated with infection, or until its size comes to be such as to interfere with free bladder drainage.

PAIN ASSOCIATED WITH LESIONS OF PROSTATE AND PROSTATIC URETHRA

Pains in this region usually arise (1) from chronic prostatitis, (2) from carcinoma of the prostate, or (3) from abscess. Associated with this condition we usually have referred pains, or sensations, which may be located anywhere below the iliac crests, but usually in the upper sacral region or in the perineum, the groin, the testicle or the urethra. Urethral pain in this condition is usually located just behind the glands or in the penoscrotal angle. It is usually the case that with chronic prostatitis, we do not have a true pain, but rather a sense of discomfort or fullness or of burning or itching, located in one of the above mentioned regions.

The pain of carcinoma of the prostate is produced presumably by the involvement of the sacral plexus in glandular metastases. Hence, the pain of carcinoma of the prostate, when present, may be described by the patient as located in the "hips", but is usually referred down the backs of the thighs, and is sciatic-like in character. In fact, the occurrence of bilateral sciatic pains in an old man is all but pathognomonic of carcinoma of the prostate.

The third type of pain associated with the prostate or deep urethra is that due to abscess of the prostate gland, or of Cowper's gland, or to ischio-rectal abscess. This pain is situated deep in the pelvis, and is sometimes described by the patient as located in the rectum. It is intense, persistent and "boring" in character.

PAIN ASSOCIATED WITH LESIONS OF THE SCROTAL CONTENTS

By far the most important and the most

frequent inflammatory lesion occurring in the scrotum, and producing pain, is acute epididymitis. Although it is customary to diagnose this acute, exquisitely painful, indurated, swelling, apparently involving the testicle, as "orchitis", as a matter of fact true acute orchitis hardly exists as a clinical entity, excepting when associated with mumps or trauma. In these cases the acute and painful swelling of the epididymitis, with the tremendous edema and induration, together with the small amount of fluid in the tunic, mask and entirely obscure the testicle itself, so that it frequently is not recognized that the true underlying pathology is located in the epididymitis. The vast majority of cases of epididymitis are gonorrheal in origin. Pyogenic epididymitis is usually post-operative, occurring particularly after prostatectomy. It is, therefore, usually safe to assume that an acute painful swelling in the scrotum is not orchitis, but epididymitis, and its primary etiology, gonorrhoea.

Tuberculosis of the epididymitis, and syphilis and tumor of the testicle, are all typically painless.

"It is the duty of the specialist to lend his aid in unravelling the tangled threads of diagnosis, to contribute his skill in the surgical requirements of the case, and, as soon as possible, to return the patient to his home, under the care of his family physician. Thus an undue expense to the patient is avoided, and thus the family physician is reinstated in the case, so that he can receive for his services his own proper reward, and thus the specialist is relieved of unnecessary details and allowed more opportunity to extend his real usefulness over a wider and more fruitful field of labor. In fact, the essence of the remedy consists in utilizing to the fullest extent the personal service of the family physician, and in minimizing, as far as possible, the individual attention of the specialist. The remedy consists in returning to the family physician a large part of the medical treatment which has unnecessarily been discharged by the specialist. Let each receive his own remuneration for his own labor, but let the specialist do less, and the family physician more."—McReynolds, Texas, M. J.

High blood-pressure is not a thing to play with; it is a big problem of diet, rest, recreation, medication and psychology.—Treatment.

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JOURNAL BUSINESS ANNOUNCEMENT

After June first, the business office maintained for some years in Omaha by the Nebraska State Medical association, and generally known as the "Journal office" will be located in Lincoln.

A little history and an explanation of the change may prove enlightening. In the earlier history of the association the headquarters office was, nominally, in the city and office of the physician who was secretary. Thus, from about 1900 to the latter part of 1911, it was in Lincoln. On the death of Dr. A. D. Wilkinson, Lincoln, then secretary, Dr. J. M. Aikin, Omaha, became secretary and the office was moved to Omaha.

In 1916 the Nebraska State Medical Journal was born and the secretary of the Nebraska State Medical Association was made business manager. In 1917 the offices of secretary and treasurer of the association were combined in the secretary-treasurer. Provision was then made for a separate office for the association activities and for a full-time office assistant to the secretary-treasurer and business manager. A year later the secretary-treasurer and business manager also became editor.

On the death of Dr. J. M. Aikin, in November, 1920, Dr. R. B. Adams, Lincoln, became secretary-treasurer, the present editor as chairman of the publication board, took up the editorship and Miss Anne Erixon, the office assistant was made business manager and in addition assisted both the secretary-treasurer and editor as much as she could

with the offices widely separated. This arrangement, while the work was done with the utmost diligence and faithfulness by the office assistant, was not wholly satisfactory to either secretary-treasurer or editor. The business manager, having resigned to assume a family relationship, the change above announced was decided upon. Miss Ivy M. Campin, Lincoln, has become acting business manager and the office will be in proximity to the office of the secretary-treasurer, Dr. R. B. Adams.

THE FIFTY-SIXTH ANNUAL MEETING

The annual meeting of the Nebraska State Medical Association at the Fontenelle hotel, Omaha, May 13, 14, 15, was attended by about 400 physicians, 344 of whom signed the register. This is a number slightly less than attended the last several meetings, the registration at Lincoln last year being 405 and at the Omaha meeting two years ago 434.

The first general session opened promptly in the morning with about fifty doctors present, a number rapidly augmented, and the forenoon program was listened to with rapt attention. The opening exercises was the first on the afternoon program. The address of welcome was given by Dr. A. S. Pinto, health officer of Omaha, representing the mayor. But two of the essayists for the afternoon were present, which somewhat marred the scientific session, but true to type, the members made a social afternoon of the available time. Clinics at the various hospitals took up the second forenoon, while the afternoon was busily occupied by a full program in which was a masterly paper by Dr. Ralph Webster of Chicago on "Blood Chemistry as an Aid to the General Practitioner", and the address of the chairman of the medical section, Dr. John Buis, on the "Problems of the General Practitioner". The last day was fully occupied, every essayist being present, and much interest was manifested in the program. Dr. Edward H. Ochsen of Chicago, gave the outstanding paper of the entire meeting on "The Non-Operative Treatment of Goiter". He thinks of goiter as a focal infection frequently due to the colon bacillus; that the colon bacillus in drinking water is the culprit and not the lack of iodine; that iodine kills the colon bacillus, hence benefits; that some people who have had typhoid have an intolerance to meat and that this type of goiter patients are benefited by a diet in which meat is restricted. He treats

adenomatous goiter by 5% injections of carbolic acid in sterile water under the most rigid asepsis of solution, syringe and point of injection.

The address of Dr. K. S. J. Hohlen, chairman of the Surgical Section, "The Opportunities of the Present Day Surgeon", was an inspiration to the younger surgeon.

The work of the Councilors and of the House of Delegates was rather easily accomplished. Dr. J. H. Bannister, was elected president pro tem of the House. Minor changes were made in the laws and notice of proposed changes to be acted upon next year was given. It would seem that less legislation and more direct interest in affairs were a sovereign remedy and that specifics for every supposed ill should not be continuously sought, by changes in the fundamental laws.

The visiting ladies' were royally entertained by the wives of Omaha physicians.

The banquet in the ball-room of the Fontennelle was a real event. After the dinner, President Nielsen gave an inspirational Presidential Address and was followed by an illustrated lecture on Nebraska Paleontology by the veteran Prof. E. H. Barbour of the Nebraska University.

Dr. Palmer Findley, Omaha, was elected president; Dr. F. S. Owen, Omaha, and R. D. Bryson, Calloway, vice presidents. Other officers were reelected.

NEBRASKA ASSOCIATION OF MEDICAL WOMEN

The Annual Meeting of the Nebraska Association of Medical Women was held at Omaha, Tuesday evening, May 13. The session opened by a delightful banquet arranged by the officers, Drs. Emilia Brandt, and Alace Kani. Through the courtesy of two members of the Athletic Club, the privilege was accorded of holding there the banquet and the following session.

The medical women present were: From Omaha, Drs. Emilia Brandt, Alace Kani, Mattie Arthur, Kathleen O'Connor Sullivan, Nora Fairchild, Addie Ralston, Rose Wohl, Grace Thomas, Mildred Buzzi, Myra Albertson, Eunice Hull, Margaret O'Sullivan, Elizabeth Moyer Swab; from Lincoln, Drs. Katherine Wolfe, May L. Flanagan, Daisy Hanson, Margaret Hammond, Ruth Warner, Marie Grote, Geno Beery, Inez Philbrick; from Hastings, Fremont, Nebraska City, respec-

tively, Drs. Amy Robinson, Charlotte Seiver, Martha McVean.

The offices of president and secretary-treasurer were given this year to Lincoln women, Drs. Inez Philbrick and Margaret Hammond. Dr. Martha McVean, of Nebraska City, was made vice president.

After the banquet, two scientific papers were read and discussed; one on "Dementia Praecox", by Dr. Marie Grote, of the staff of the State Hospital for the Insane, at Lincoln; and one on "Diseases of the Eye, Due to Endocrine Disorders," by Dr. Nora Fairchild, of the Gifford Clinic.

The semi-annual meeting of the association will be held in the fall, at Lincoln. Dr. Inez Philbrick will represent the association at the meeting of the National Medical Women's Association, at Chicago, June 9-10. Possibly, also, Drs. Martha McVean and Kathleen O'Connor Sullivan will attend the Chicago Meeting.

—Inez C. Philbrick.

NEBRASKA ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY

The Nebraska Academy of Ophthalmology and Oto-Laryngology met the evening of May 12th, 1924, at the University Club, Omaha, for dinner, followed by a scientific program.

The following officers were elected for the coming year: Dr. S. E. Cook, Lincoln, president; Dr. H. B. Lemere, Omaha, vice president; Dr. Clarence Rubendall, Omaha, Sec.-Treas.

Dr. H. B. Lemere presented a clinical case with complete paralysis of the third nerve, right side, following empyema of the right frontal sinus.

Four papers were presented to the society.

Dr. J. B. Potts—Globus Hystericus. This paper developed the theory that globus is an esophageal neurosis secondary to some mental conflict. This conflict being produced by some moral or religious shock to the nervous system which in turn produces a persistent esophageal reaction. Numerous case reports were cited to support the theory.

Dr. Jas. Tucker, Beatrice—"Paranasal Sinusitis with Complications". This paper was a report of a series of cases:

1—Boy of nine with frontal abscess secondary to empyema of frontal sinus—death.

2—Female—Defective vision, secondary to

empyema of the frontal sinus—Improvement with intranasal operation.

3—Female—Lethargic encephalitis complicated with empyema of the frontal sinus. Cure.

4—Retrobulbar neuritis, right eye, due to empyema frontal sinus. Cure.

Dr. J. J. Hompes, Lincoln—"Eighth Nerve Degeneration". Reduced hearing and tinnitus are frequently caused by toxic or circulatory disturbance secondary to some remote disease. Case histories cited from the following conditions as examples: Gall bladder disease, Appendicitis, Syphilis, Tuberculosis.

Dr. J. M. Bannister, Omaha—"Ocular Palsies, Their Nature and Diagnosis".

The current text book descriptions of ocular palsies are so involved that it is almost impossible for the ordinary student to understand their nature. This material was correlated and simplified.

—Clarence Rubendall.

NEBRASKA RADIOLOGICAL SOCIETY

The Nebraska Radiological society held its meeting at the Fontenelle hotel, May 12, the day preceding the opening of the annual meeting of the Nebraska State Medical association. Eleven papers were on the program. A banquet and two addresses concluded the session.

The scientific papers were excellent. The interest on the part of those present was above the ordinary. The attendance was small. It was made up of those who are using the x-ray in diagnosis and treatment, either altogether or as a main side-line. The paper given by Dr. A. D. Dunn, at the banquet, was particularly interesting, worthy of appearance in any journal and of general interest to all medical men.

MATERNAL MORTALITY IN OMAHA

The maternal mortality in the city of Omaha is decreasing. The maternal death rate per 1,000 births during the year 1923 was 6.7%. There were 4,874 births in Omaha in the year 1923. The total number of deaths in women of the child-bearing period, or from 15 to 47 years of age, was 355. The puerperal group was fourth on the list for causes of death in this group of women.

The following outline will more graphically represent the seven highest causes of death:

Omaha. 1923.

Maternal Mortality Statistics in Women of Child-Bearing Period. Ages 15-47.

Total Number of Deaths from all Causes	Number of Deaths
	355
1. Cardiac Diseases	45
2. Tuberculosis	40
3. Pulmonary affections	36
4. Puerperal group	33
5. Operation & shock	30
6. Cancer	27
7. Peritonitis	27

These figures were furnished through the courtesy of Mrs. R. H. Findley, formerly of the Visiting Nurses' Staff.

The maternal death rate per thousand births in 1922 was 8.9% and in 1921 was 8.7%.

The mortality of child birth could be reduced to one case in a thousand if the public were instructed regarding the needful precautions and if the physicians were all capable of meeting obstetrical emergencies and, still more important, practiced aseptic technique.

For the year 1922 in Omaha there were 4,819 births with a total of 375 deaths in women of the child-bearing period. The puerperal group stood third on the list in the causes of death that year. The maternal death rate per thousand births was 8.9%.

1922

Total Number of Deaths from all Causes	Number of Deaths
	375
1. Cardiac Diseases	43
2. Tuberculosis	43
3. Puerperal group	42
4. Pneumonia & Bronchitis	36
5. Brain Tumors	31
6. Operation & Shock	28
7. Cancer	27

In Omaha, during the year 1921, the total number of births were 5044, with the total number of deaths 326. The maternal death rate per thousand births was 8.7%.

1921

Total number of Deaths from all Causes	Number of Deaths
	326
1. Puerperal Group	44
2. Tuberculosis	40
3. Heart Disease	33
4. Peritonitis	29
5. Cancer	24
6. Operative mortality & shock	24

—Earl C. Sage.

THE LIBRARY OF THE UNIVERSITY OF
NEBRASKA COLLEGE OF MEDICINE

The recent article of Gilcherist* which calls attention to the problems of medical libraries in general should direct attention to the opportunities to extend the usefulness of our local regional library, that of the library of the University of Nebraska College of Medicine.

In building, the library cannot meet the ideal presented by Gilcherist, but in books and periodicals, there is a surprising completeness in the thirty thousand volumes and two hundred and ten files of current periodicals. In point of service so stressed in the Gilcherist article, our library is more than anxious to meet all possible demands. During the last year attendance has increased gradually and at present about two hundred visitors a week, exclusive of medical students, register in the reading room.

Requests by letter for information received prompt attention from the librarian. Only some five requests a week are received which vary from a citation to a definite article to complete bibliographies. About ten books or periodicals a week are sent out by mail. These loans are promptly supplied from the shelves of the library when the books are available, and every effort is made to obtain the volume desired from the larger libraries when not on hand.

During the last year, there has been over five thousand accessions. In addition to current books, these accessions include a very comprehensive list of important English books of the period from 1800 to 1860, so brilliant in English clinical medicine. In medical biography and associated interests, the collection surpasses many of the larger libraries.

No private library can be adequate to meet the inspiration of the real student of medicine. Even in the narrower special fields, the column of yearly publications of one sort or another is so vast that the private purse cannot meet the necessary outlay, but even if this difficulty should be met, there still remains the impossibility of any private library containing much true source material. The average reader is appalled at the bibliographies appended to many articles of the present literary fashion and realizes instinctively that many articles cited could not have been

read, even in abstract by the author. But fundamental source themes may always be studied with delight whether in preparation of articles or merely for personal pleasure. Withering's Fox Glove, Paget's Disease of Nipple, or Disease of Bone; Addison's Peculiar Anemia; Stoke's Disease of the Aorta, are but examples of original source material to which subsequent writers have added little but detail. Practically all of this fundamental source material and at least 90 per cent of later articles required in any medical study can be found in our local library.

—Leroy Crummer.

PEMPHIGUS VULGARIS WITH FINDINGS IN
THE SPINAL CORD SUGGESTING THE
ETIOLOGY OF THE SKIN LESIONS:
REPORT OF A CASE

Dr. George W. Covey, Lincoln, reports in detail (Archives of Dermatology and Syphilology, March, 1924) a case of Pemphigus Vulgaris that was carried through a three year course. There were two distinct exacerbations with a period of almost complete absence of any manifestations of the disease. Each exacerbation was definitely associated with dental work as a starting point.

Attention is called to this association with an evident point of infection and to certain other observations in support of the supposition that there is an infectious etiology.

Observations on the character and distribution of the skin lesions lead the author to believe there would be found some pathology in the spinal cord, its dorsal roots or horns. Definite microscopic findings were present in the dorsal roots at the post mortem. These lesions and others of a microscopic nature in the dorsal horns, the dorsal roots and in the cord about the exit of the dorsal roots, are described and illustrated by photomicrographs.

The conclusions reached from the study of this case are as follows:

1. Pemphigus has been classified as a skin disease.

2. The etiology has not been determined with certainty, although Eberson's recent work seems to point to *Bacillus pemphigi* as a possible cause.

3. The pathology of the disease is meagerly described, the descriptions being largely limited to that of the skin, with a few reports on the internal organs.

4. The case herein described presents

*A modern Medical School Library. Gilcherist, J. A. M. A. V. 82, No. 16, p. 1287.

findings in the spinal cord and dorsal roots that probably have not been described before.

5. These lesions are in such a location and of such character that their possible role in the production of the visible lesions of this disease is perfectly evident.

A PIONEER NEBRASKA DOCTOR WHO BECAME A LANDOWNER AND FINANCIER—

So much has been said about physicians being poor business men that it is a real treat to be able to pick out one who has had all the usual experiences of the pioneer country doctor for almost a score of years and later turned his attention to Nebraska soil and made good in a financial way.

Dr. Thomas C. Sexton, Fremont, was born in Smythe county, Virginia, in 1843, served in the Confederate army, attended Washington University (medical school), Baltimore, but before completing his course he came west with the late Dr. Alexander Bear (see *Nebr. State Med. Jour.* p. 111, March, '23). A story has always been current that after



DR. THOMAS C. SEXTON

reaching Omaha the two young men played a game of cards on the banks of the Missouri to determine whether to push on into the interior of the new state or return to Virginia, and Nebraska won. They located in Fremont, but after three months Dr. Sexton located at Fontenelle. In the fall of 1870 he returned to his medical studies in Baltimore and was graduated the following spring. He then again took up his work at Fontenelle where he continued in practice until 1886 when he retired from active practice. During the

years of his activities at Fontenelle he saw the possibilities of the rich farm lands about him and acquired large holdings in that section of the state, much of which he still retains. It is said that six figures would not express the value of his holdings. He was a member of the Nebraska State Medical Society up to 1892—a period of about fifteen years.

THE CHICAGO SESSION

All Fellows who will attend the Seventy-Fifth Annual Session of the A. M. A., Chicago, June 9-13, are urged to bring with them their 1924 Fellowship cards.

Railroad rates of one and one-half fare will be available, but it will be necessary to secure certificate from agent when ticket to Chicago is bought. This certificate must be signed by the Secretary of the A. M. A. and validated by a special agent after which it will be honored for return tickets at one-half fare.

DEAN NILES AND "THE POOR BOY IN MEDICINE", AGAIN

To the Editor:

I have received from the officers of the Association of American Medical Colleges a very vigorous protest over the editorial "The Poor Boy in Medicine" which appeared in the April number of the Nebraska State Medical Journal. It is rather curious that a scientific journal should base an editorial upon a newspaper report. * * * * I wonder if the writer of the editorial read Dr. Niles' paper or heard it read. I heard Dr. Niles' paper and re-read a portion of it later. * * * *

The paper in question was written by a very able man and it took rather high ground, favoring every possible encouragement to the poor boy with ambition and brains. It urged an increase in the number of scholarships and fellowships. Dr. Niles, on the other hand, pointed out the danger of the student's ambition out-distancing his ability. Every Dean in this country cannot help but agree with Dr. Niles that many students, because of necessary outside work, seriously injure their health and come out physically unfit for the arduous duties of medical practice. He advocated what has come to be common practice, namely, advising students to stay out of school until the amount that must be earned in school will not exceed approximately thirty dollars per month. This that the student may devote a sufficient amount of time

to his studies and that his personal health may be conserved.

The newspaper reporters, naturally, seized upon Dr. Niles' paper as of sensational appeal to the public. I may say to you that Dr. Niles' paper was misunderstood by the newspapers and his conclusions were either omitted or misconstrued.

Cordially yours,
Irving S. Cutter, Dean.

EDITORIAL PARAGRAPHS

The United States Public Health Service announces a summer school in public health at the University of Iowa, Iowa City, June 9 to July 18. Summer schools will also be conducted at Columbia University, Michigan University, and University of California.

A modern medical college and hospital is to be built on the Mount of Olives, overlooking Jerusalem.

Read the Ads,—and while thumbing the pages notice the splendid abstracts and clip-pings used as fillers.

The annual meeting just held resulted in the addition of one new word to our vocabulary, if nothing else—"Cocktail-Duodenitis".

Since 1900 the average age from death in Kentucky has been raised from 32 to 53, according to the report of the state board of health.

A physician thinks more of himself after several days attendance at a medical society meeting such as the recent annual meeting of the Nebraska State Medical Association and he has returned home with more knowledge, more confidence, more zest!

Vaccination methods adopted by the Spanish physicians in 1804, five years after the discovery of vaccination, are still in use in isolated districts of New Mexico. Briefly, it is arm to arm vaccination; a vaccinated child is taken from place to place and the precious vaccine is transferred on the spot from the arm to patient.

Occasionally the editor sends a letter of inquiry to a member and fails to get a reply. One may not admire the individual who is President of the United States, but one must respect the official, as such. By way of comparison the editor sinks into the infinitesimal, but the analogy holds. The next time this happens the editor will send a stamped self addressed envelope for reply and register the letter.

FOOT AND MOUTH DISEASE

In view of the epizootic of foot and mouth disease in cattle in certain parts of California at the present time and the interference with travel and with the shipment of certain food stuffs (including milk) as the result of the presence of this disease, Acting Surgeon General White of the Public Health Service was asked to discuss foot and mouth disease from the viewpoint of its possible danger to human beings.

"The disease", Dr. White states, "is an acute, highly contagious malady affecting chiefly cloven-hoofed animals, such as cattle and sheep. Animals suffering from foot and mouth disease have fever, followed by an eruption consisting of vesicles (small blisters like sores) occurring chiefly on the mucous membrane of the mouth and on the skin at the cleft of the hoof and less frequently on the udders and other portions of the skin. There is usually prolonged ill health and much wasting of the tissues.

"The germ which causes this disease has not been identified, but it is known that it occurs particularly in the exudate from the vesicles, in the saliva, and in the milk of infected animals, though it is not limited to these materials. It is readily destroyed by heat, such as the boiling or pasteurization of milk.

"Adult human beings are not very apt to contract the disease, but it is by no means rare among children.

"The question has been raised as to whether the disease in children known as "impetigo contagiosa" may not be identical with foot and mouth disease in animals, but no one has as yet been able to answer this question either in the affirmative or in the negative. Foot and mouth disease is not very fatal in cattle, and apparently much less so in human beings, if at all. It does cause serious losses when cattle are infected, because of the interference with the sale of milk, the reduction of the quantity of beef produced, and also on account of the expense and inconvenience resulting from quarantines against infected districts."

NEBRASKA UNIVERSITY, POSTGRADUATE COURSE IN MEDICINE

The Fifth Annual Post-Graduate Course for Practitioners will be held at the University Hospital under the auspices of the University of Nebraska, College of Medicine from June 16 to 28 inclusive. The fee will be \$30.00.

This course will consist of practical exercises, demonstrations, and bedside work; in diagnosis, treatment of medical and surgical cases, interpretation of laboratory and clinical pathological findings. The facilities of the University Hospital and the large out-patient department will be fully utilized with ward clinics and demonstrations. Instruction in the modern treatment of venereal infections will be given in the evening out-patient services.

This course offers an opportunity for the busy practitioner to obtain accurate information and data covering recent advances in medicine and surgery. The class is limited in number.

For further information address the Dean of the University of Nebraska, College of Medicine, 42nd and Dewey Avenue, Omaha, Nebraska.

GUIDE TO PREPARING NARCOTIC ORDER FORMS

1923 Series

- 1—Insert date of making the order.
- 2—In the space above the name, enter number of items.
- 3—Do not confuse "Item" with "Package". One item may include any number of like packages. Do not use two lines for one item.
- 4—Enter name and address of wholesaler or manufacturer.
- 5—Observe the sample order and apply it in making your own order.
- 6—Do not alter, erase, or change any part of the order, once it is written. If either is done the order is null and void and must be retained with the duplicate.
- 7—TRADE NAMES Must not be used unless incorporated. Only the owners' names are permissible.
- 8—Writing must be readable. Reasonable care should be used.
- 9—Ink or indelible pencil must be used.
- 10—Do not be peeved or angered if a form is returned for completion or to be re-written.

WHO MAY SIGN ORDER FORMS

- 1. A legally constituted officer of a corporation; as, Pres., Sec., Treas. A manager may not sign unless given power of attorney. Official title must follow the name.
- 2. A member of a firm.
- 3. A person having "power of attorney." In cases where individuals, members of a firm, or corporations, authorize someone to sign narcotic papers of any kind, such a person must be given "power of attorney". The power of attorney authority must be filed with the Collector. The wording "Atty. in fact" must in every case follow the agent's name as "J. J. Jones, Atty. in fact".
- 4. A registered individual, whose name is on the order form.
- 5. Note the four ways of signing below the SAMPLE and act accordingly.

Item	No. of Pkgs.	To be filled in by Purchaser		To be filled in by Consignor
		Size of Pkgs.	Name of Article and name of Narcotic Drug	
1	5	20 H. T.	1/4 Gr. Morph. Sulphate	
2	1	100 T. T.	1/8 Gr. Coriza Imp. Morph.	
3	3	1's.	Tincture opium	
4	1	5000. C. T.	Diarrhoea containing 1/16 Gr. Morph. Sulphate	
5	1	4 oz.	"Chlorodyne" containing 4 Gr. Morph. Sulph.	
6	1	6 — 1/4 Gr.	Ampules - Morph Sulphate	
7	1	100 1/4 Gr.	Morphine & Atropine	
8				
9				
10				
1 Arcadia Drug Co. Inc.		J. H. Smith, Sec.		
2 Light & Sparks		W. J. Sparks, Partner		
3 Work & Leisure		B. A. Aunt, Atty. in Fact		
4		Fred Detective, Owner		

THE ARMY MEDICAL CORPS AS A CAREER

Young doctors who have had at least one year's post-graduate experience are being solicited by the Surgeon General of the Army to adopt the service as a career, according to a War Department announcement made public today.

The official circular authorizing examinations to be held during the week commencing Monday, July 28, gives the following regarding eligibility:

The applicant must be a male citizen of the United States, a graduate of an acceptable medical

school legally authorized to confer the degree of Doctor of Medicine, must have had at least one year's hospital training subsequent to the completion of a four-year course of instruction in such medical school, or, in lieu thereof, have served one year as a medical officer of the United States Army between April 6, 1917, and July 1, 1919, and must be between the ages of 22 6-12 and 31 6-12 years at time of examination.

The necessary blank forms may be obtained at any military station, or direct from the Adjutant General of the Army, Washington, D. C.

NEBRASKA ALPHA CHAPTER NEW MEMBERS

The Nebraska Alpha Chapter of Alpha Omega Alpha announces the following elections to membership from the Class of 1924, University of Nebraska College of Medicine, Omaha, Nebraska:

Clarence F. Bantin, Omaha, Nebraska; Walter Benthack, Chadron, Nebraska; Glenn S. Everts, Lincoln, Nebraska; Thomas P. Haslam, Omaha, Nebraska; John H. Judd, Lincoln, Nebraska; Melvin N. Newquist, Wausa, Nebraska; Max E. Wonders, Omaha, Nebraska; Ozro T. Woods, Lincoln, Nebraska.

Alpha Omega Alpha is an honorary fraternity, chapters of which have been established in the twenty-six leading medical schools of the United States. The chapter at the University of Nebraska was established in 1914. Election to membership is based upon the scholarship record throughout the four years of the medical course.

The annual dinner of the Nebraska Alpha Chapter was held in Omaha on May 23. The officers of the Chapter are Dr. Harold Gifford, President, and Dr. Donald R. Owen, Secretary.

THE SOCIETIES

The program of the Omaha-Douglas County Medical Society for April 22nd, consisted of three papers. First, "An Informal Discussion of the Atr.a of Infection Causing Puerperal Fever", by Dr. Palmer Findley. He showed some 30 slides to illustrate his remarks.

Second paper by Dr. Clyde Moore on "Lactic Acid Milk Feeding in Babies." In the discussion Dr. Henske remarked that he was glad Dr. Moore did not recommend lactic acid milk as a fool-proof method for feeding all babies. Such feeding he considered especially indicated in cases of malnutrition and in cases of infection where the child's resistance was lowered. Dr. McClanahan said that in 30 years time he had seen and used many methods of feeding babies and he did not want the profession to lose sight of the fact that mother's milk was the best food after all and stressed the point that we should all insist on the present-time mother nursing her infant if possible. Dr. Floyd Clarke believed Dr. Brody deserved as much, if not more, credit for having evolved this lactic acid milk than did Dr. Marriot, who more than any one else has popularized this method of artificial feeding. He showed how Marriot absolutely disregarded the caloric needs of the infant in his method of administering the lactic acid milk. He also brought up the point of excoriated buttocks in those children fed in this manner as one of the disagreeable features.

The third paper was by Dr. Floyd Clark on "Pneumonia in Children". There are many cases of un-

suspected ante-mortem pneumonias that are first picked up on the autopsy table. There is a favorable prognosis in frank lobar pneumonia. He favored counter irritation in the form of mustard paste; did not care to administer many drugs, but preferred to watch the chest findings as determined by percussion—alkalinize the patient, and give good nursing care. Dr. Howard B. Hamilton in opening the discussion said that Dr. Morgan of Montreal had remarked that 70% of the cases of lobar pneumonia got well with treatment and 20% in spite of treatment. Dr. Hamilton was rather inclined to believe that the percentages should have been reversed. He also believed scarcely a drug had any beneficial results in the treatment of these children. He personally does not use digitalis. He said it was used in Von Pirquet's clinic but that Finkelstein only used it when there was heart failure. He thought that in some cases the type of organism should be determined, and advocated the use of serum. Empyema as a complication generally followed broncho-pneumonia and many cases recovered without surgery. He favored frequent change of position in broncho-pneumonia, allowing the mother to pick up her baby to nurse it. Dr. Wm. Berry used the pneumonia jacket and acetate of potassium for alkalinization. He liked tincture of nux vomica as a tonic and heart stimulant. Dr. Henske thought that the prognosis of broncho-pneumonia depended on what organism caused the primary infection. He advocated the forcing of fluids in all these cases to combat dehydration.

Before the Pawnee County Medical Society meeting, May 14, Dr. J. S. Welch, Lincoln, and Dr. H. E. Warren, Falls City, were guests of honor. Dr. Warren (dentist) gave a paper "Relation of Diseased Teeth to Bodily Ills." This society is one of the most active organizations in the state and at each monthly meeting they have men who are specialists in their line to address them.

The Gage County Medical Society, at Beatrice, May 6, had a dinner at the Paddock hotel. Case reports were given by Dr. C. G. Baird; Dr. J. C. Waddell gave a resume of Dr. J. N. Hall's lecture before the Lancaster County Medical society; Dr. Fred. W. Buckley gave a paper on the value of routine health inspection. A number of out-of-town physicians were present.

The Fillmore County Medical Society at a meeting held at Geneva, elected Dr. A. A. Ashby, Fairmont, president; Dr. V. V. Smerha, Milligan, secretary-treasurer; Dr. Joseph Bixby, Geneva, delegate.

HUMAN INTEREST TALES

Dr. F. A. Nelson, has located at Dawson.

Dr. D. B. Kantor, has located at Sargent.

Dr. G. H. Misko has moved from North Bend to Blair.

Dr. Palmer Findley, Omaha, has moved to 428 Aquilla Court.

Dr. G. H. Beck, Blair, has decided to locate in southern California.

Dr. C. E. Palmer, David City, has recently done postgraduate work in Chicago.

Two Omaha physicians are under arrest for violation of the Harrison drug act.

Dr. S. B. McDairmid, Omaha, has been elected president of the Ad-Sell League.

The sudden death of the wife of Dr. C. T. Uien, Omaha, is a shock to the profession.

National Hospital day, May 12, was generally observed at the hospitals throughout the state.

An Omaha surgeon has been sued for \$85,000 for malpractice on what appears a flimsy pretext.

Dr. Irving S. Cutter was elected president of the Omaha chapter Sons of the American Revolution.

Dr. Delmer Davis, announces his removal June first from Omaha to Security Building, Hollywood, Calif.

Dr. A. G. Lueschen, Columbus, has gone to Vienna to do postgraduate work on eye, ear, nose and throat.

Dr. H. B. Boyden, Grand Island, has leased the Grand Island General hospital and has taken possession.

Dr. C. W. Slagle, Alliance, underwent a serious operation at the Mayo clinic, Rochester, Minn., early in April.

Dr. D. D. Potter, Fairbury, one of our councilors, was elected delegate to the Republican National convention.

The marriage of Dr. Harry H. Thompson, Charter Oak, Nebr., and Miss Bessie Shanks, Auburn, Nebr., is announced.

A colored practitioner of Grand Island is under arrest for committing abortions resulting in the death of two victims.

Dr. E. E. Irons, dean of Rush Medical college, was the guest of the Nu Sigma Nu fraternity, Omaha, at the Brandeis grill, April 26.

The sympathies of the profession go to Dr. J. J. Kiefer, West Point, who lost his wife recently. She had been ill for some time.

Dr. and Mrs. Charles F. Moon, Omaha, who have spent a year abroad, most of the time in Vienna, have returned to this country.

The Nebraska Academy of Science met in Omaha, May 1-3. Dean Cutter of the U. N. college of medicine discussed "Social Science".

A Phi Ro Sigma fraternity tea was given to the Nebraska University college of medicine faculty and their wives Saturday, April 26.

Dr. W. J. Douglass, Atkinson, councilor of the Eighth District, suffered a broken leg recently and was much missed at the annual meeting.

Dr. Donald Macrae, Council Bluffs, was elected head of the Iowa Military Surgeons' organization at the annual meeting at Des Moines, May 8.

Dr. and Mrs. J. S. Taylor, Fairbury, suffered serious but not alarming injuries when the auto steering device broke and they were ditched.

Dr. E. A. Warner, Blue Springs, received severe injuries of the face when the pick in the hands of a workman he was watching flew off the handle and struck him.

Nebraska orthopedists attending the annual meeting of the American Orthopedic Association at Baltimore in May were Dr. J. P. Lord, Omaha, and Dr. J. E. M. Thomson, Lincoln.

Dr. D. W. Bell, a former practitioner at Exeter, more lately of Omaha where he had a teaching connection with Creighton medical, has returned to Exeter to practice his profession.

Dr. W. L. Shearer, Omaha, appeared before the Oklahoma State Dental Society at their annual meet-

ing, Enid, and gave a lecture on "The Pathology of the Mouth, Cleft Palate and Cleft Lip."

The supreme court freed Dr. Charles L. Egbert, Hastings surgeon convicted of second degree murder for shooting his son-in-law, on the ground that the testimony did not establish malice.

Dr. Geo. A. Griot, Chadron, has gone to Europe for postgraduate work in eye, ear, nose and throat surgery. He expects to be gone six months and will visit the famous clinics of Germany and Austria.

The case of Dr. Albert F. Tyler and the Radiological Publishing Co. versus the Radiological Society of North America, in the District Court of St. Paul, Minn., April 21, 1924, was decided against the plaintiff on all important points.

Dr. S. F. Sanders, Holdrege, one of the old guard, not only in the Nebraska State Medical association, but also in the G. A. R., was elected head of the Grand Army organization for Nebraska at a meeting held at Fremont, early in May.

Dr. Miles J. Breuer, Lincoln, has been made chairman of a subcommittee of the Lincoln Chamber of Commerce to study criminals, with a view of averting such tragedies as occurred in a Lincoln court room this spring, in the killing of the presiding judge.

NECROLOGICAL

Dr. Joseph P. Sheehy, Sioux City, Creighton University College of Medicine, 1915; reared and educated in Omaha; was killed in an auto wreck in which his bride also was seriously injured, May 13, aged about 32.

Dr. Arthur E. Lane, Laramie, Wyo., Nebraska University College of Medicine, 1905; sometime president of the Nebraska University Medical Alumni association; died at Long Beach, Calif., about May 5, after an illness extending over several years, aged about 52.

Dr. George G. Case, Lexington, Nebr., Eclectic Medical College, Cincinnati, 1880; practitioner at Elm Creek, Nebr., from 1885 to about 1900; afterward a resident of Idaho for a number of years; died at the home of his sister, Mrs. (Dr.) F. J. Rosenberg, Lexington, May 6, of premature senility and cardio-renal complications, aged 66.

THE RELATION OF THE DICK TEST TO SCARLET FEVER

Charles F. Branch and F. Gill Edwards, Boston (Journal A. M. A., April 19, 1924), made use of a specific streptococcus filtrate obtained from the Dicks in an intradermal test for immunity against scarlet fever in 301 cases. The results were strikingly similar to those reported by the Dicks. The test consisted of an intracutaneous injection of 0.1 c.c. of the 1:1,000 W filtrate, usually on the anterior surface of the forearm, but in some instances of the abdomen. Of sixty-five patients convalescing from scarlet fever all were negative. Three of these patients, including children between the ages of 3 and 12 years, were tested during the first four

days of the acute stage of the disease, at which time they gave slightly positive reactions. Testing these three patients again after two weeks, and without any convalescent serum having been used in their treatment, they were found to be negative. Of a second group of sixty-two patients with no history of scarlet fever, twenty-nine were slightly positive, positive or strongly positive, and thirty-three were negative. Of a third group of eighteen patients with no history of scarlet fever, there was one positive and two strongly positive reactions, in children respectively 1, 11 and 2½ year old. Because of the most unsatisfactory histories obtainable in the third group of infants, a reasonable doubt arises as to whether some of them may not have had scarlet fever. If this was the case, the disproportionately large number of negative reactions obtained would be accounted for. The authors conclude that this test apparently has a specific relationship to immunity to scarlet fever.

DEATHS FROM AUTOMOBILES

According to the U. S. Census Bureau 11,666 persons lost their lives in automobile accidents last year in the death registration area of the United States, which area comprises 85 per cent of the total population. This is an increase of 1,498 over the previous year, and represents a death rate of 12.5 per 100,000 population. California has the highest rate of the thirty-seven states in the registration area, its total representing 26.0 per 100,000 population, and Mississippi has the lowest rate with 3.4 per 100,000. Los Angeles had the highest rate in the sixty-seven cities reporting, showing 29.5 per 100,000.

THE PASSING OF THE GENERAL PRACTITIONER

The unfortunate individual who, by reason of the obscurity of his symptoms, is sent from one specialist to another often looks in vain for the only one who can interpret, weigh the value of and fit in place the seemingly unrelated parts of the puzzle: the well-equipped, broad-visioned, experienced general practitioner—the humanizer, as some one has fittingly expressed it, of medical practice. With his disappearance, except in some of our rural communities, disappears also that cherished, often sacred, relationship between the doctor and patient—the personal side of practice.—Pharmacol Advance.

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CONTENTS

Page	Page
A Non-Operative Treatment of Goitre, Edward H. Ochsner, B. S., M. D., F. A. C. S. 245	The Chicago A. M. A. Convention..... 282
Duodenitis, C. A. Roeder, M. D..... 252	Partitioned Skulls Found..... 282
Diarrhoea in Infancy and in Early Child- hood, E. V. Wiedman, M. D..... 256	Dr. George H. Simmons, Editor, Jour- nal A. M. A..... 283
Treatment of Hay Fever by Pollen Extract Inoculation, A. H. Webb, M. D..... 260	The Summer and the Infant..... 284
Roentgenological Findings of the Right Upper Quadrant of the Abdomen, A. P. Overgaard, M. D., F. A. C. R..... 264	Toxin-Antitoxin 284
Kyphosis Due to Congenital Anomaly of Spine, J. W. Duncan, M. D..... 269	Conservative Treatment of Fractures.. 285
Pelvic Pain in Women, Palmer Findley, M. D., F. A. C. S..... 270	The Legion Provides Hospital Rooms for Its Unfortunate Members..... 285
56th Annual Convention of the Nebraska State Medical Association, Omaha, May 13-15, 1924..... 271	Editorial Paragraphs About the A. M. A. Meeting 286
In Memoriam 281	"Ourselves As Others See Us"..... 286
EDITORIALS—	Announcement, Post-Graduate Medical Course — University of Nebraska Col- lege of Medicine..... 286
Manuscripts — News Notes — Re- prints — Ads..... 282	Creighton University, College of Medicine Graduates 1924 and Internship Assign- ments 286
Tonsillectomy in Its Relation to the Recurrence of Rheumatism..... 282	University of Nebraska, College of Medi- cine Graduates 1924 and Internship As- signments 287
	Human Interest Tales..... 288
	Necrological 288

A NON-OPERATIVE TREATMENT OF GOITRE*

Edward H. Ochsner, B. S., M. D., F. A. C. S.
Attending Surgeon, Augustana Hospital, Chicago.

I want to thank your officers and particularly my friend and former student, Dr. Hohlen, for the privilege of being with you this afternoon. It is always a great pleasure to rub up against men that are doing the things that are worth while in medicine. I have always felt that when I go to these meetings I get more than I give. I feel particularly that way if those who listen to my address will discuss it.

Goitre has received so much attention in recent years that it would almost seem that nothing new could be said about it. However, I wish to call your attention to a method of treatment which while not entirely new

has not received the consideration that it should. I refer to a non-operative and yet surgical method of treatment.

Of the numerous variations from the normal to which the thyroid gland is subject this paper will be confined to the treatment of the four classes, namely:

- I. CYSTS
- II. SIMPLE ADENOMATOUS GOITRE
WITH OR WITHOUT DEGENERATIVE
CHANGES
- III. TOXIC ADENOMATOUS GOITRE
- IV. EXOPHTHALMIC GOITRE

Some very excellent clinical observers be-

*Address in Surgery delivered before the Nebraska State Medical Society at Omaha, May 15, 1924.

lieve that these four are distinct disease entities. With this view I cannot agree. I believe they are all the same in origin and are simply varieties of the same disease depending upon the resistance of the individual and the severity and nature of the toxins or irritants acting. Thus I have never been able to clearly see the line of demarcation between a simple adenomatous goitre with liquefaction of the gland substance and a cystic goitre, or between a simple adenomatous goitre and a toxic adenomatous goitre, or between either and an exophthalmic goitre. It is true that we find patients who fit into the textbook descriptions of these four types. But I think we find a larger number that are mixtures and that would be classified differently by different individuals. I have now under my care a patient that was seen about ten days ago by one physician who made a definite diagnosis of exophthalmic goitre. Three days ago that same patient was seen by one of America's most prominent surgeons who has done a great many goitre operations himself who diagnosed the case as a clear case of toxic adenomatous goitre. I personally diagnosed it as a mixture of the two.

ETIOLOGY

I believe there are three common primary or principal causes for the above varieties of goitre:

1. Focal Infections.
2. Colon Bacillus infection of the intestinal tract.
3. Meat intolerance of the patient.

There are in addition a large number of secondary or contributing causes which operate in reducing the general resistance of the patient such as severe infective diseases, severe physical or psychic shock, physical or mental excessive fatigue and many others which might be mentioned.

I believe that the above varieties of thyroid enlargements and derangements are a reaction to one of the three primary etiological factors above enumerated, a defense effort of the system to the toxins produced by any one of these irritants.

I think we are all pretty well agreed about the infective theory of both adenomatous and exophthalmic goitre. The only issue that I would take with some of the men who favor the infective theory of goitre is that I think they unduly magnify the importance of it. I do not know what per cent of struma are the

result of focal infections but I am very thoroughly convinced that it is not the majority. I believe it is the less active and potent agent of the three in the production of goitre.

I think the second most important factor is excessive repeated contamination of the intestinal tract with colon bacilli. I do not believe that the colon bacillus is a natural habitant of the intestine of man. Man simply has fairly adjusted himself to this almost universal parasite but if too large a number of colon bacilli are ingested over a long period of time the thyroid gland must necessarily become hyperactive in order to counteract the toxins produced by this parasite. There are three principal sources of infection of the digestive tract with colon bacilli, namely water, milk and uncooked vegetables. I became convinced of the importance of water contamination as the cause of goitre over 20 years ago.

I had a family of eight, two parents and six children, of whom the latter all had goitres. I inquired from the mother what the supply of their drinking water was and she said a cistern. Then somehow in the conversation it came out that the two half-grown boys kept between 100 and 150 pigeons in a dovecot in the loft of the nearby barn. We all know what nuisances, pests and contaminators pigeons are. These pigeons roosted in their dovecot at night but a good share of their time during the day was spent on the roof of the house and when a rain came all the accumulated offal was washed into the cistern and the family drank this colon contaminated water day after day with the result that all of the children who evidently had less resistance to this infection than the parents, developed simple adenomatous goitres. I advised the mother to get the drinking water from a neighboring well, in addition to boil it and within six months all of the children were relieved of their goitres without taking a drop of medicine.

According to government statistics Waukesha county, Wisconsin, sells more water than any other county in the United States and has the largest potable spring in the world. Waukesha county has probably as large a per cent of goitres per capita as any other county in the United States. Waukesha county has as fine drinking water as exists anywhere in the world and nearly as bad as any. Why? It has many springs which geologists say get their water some 200 miles from northern Wisconsin. It is also located in the lateral moraine glacial region.

I have a farm in Waukesha county of 62 acres. It has 11 glacial kettles varying in size from one-eighth of an acre to an acre, and in depth from a few to fifty feet. In the largest of these kettles there has accumulated through the ages from eight to fifteen feet of rotted leaves. I sent some of this

material to the state department of agriculture, had it analyzed and the report came back that it contained a slightly larger per cent of available nitrogen than ordinary barnyard manure. I drilled a well about thirty rods from this kettle, down 130 feet, lining it with four-inch metal casing. When I pumped the first water out it looked dark and tasted sweetish. I set two men to pumping with a hand pump for four hours continuously. At the end of that time the water still tasted sweetish. I took a sterile receptacle, filled it as carefully as I could and sent it to the State Hygienic Laboratory. The report came back that the water contained colon bacilli in large numbers. This investigation explained to me why my neighbors on both sides had goitres, one of whom has since died from the disease because she refused to stop drinking contaminated well water and refused to submit to effective treatment. I have abandoned my well for family use and haul my drinking water a mile from a beautiful clear Waukesha spring instead. If I had not taken this precaution my children might easily have acquired goitres instead of health during their summer vacations.

The third most common cause of goitre is an intolerance to meat which a considerable per cent of individuals have. These patients with a meat intolerance are very likely to develop hyperthyroidism if they are given large quantities of meat or large quantities of meat extracts such as meat gravies and meat soups. My observation leads me to believe that there are two chief causes of meat intolerance, one an inherited intolerance and the other an acquired intolerance. The most common cause of acquired intolerance to meat I believe is caused by a severe attack of typhoid fever. My reasons for this latter belief will be dealt with in a subsequent paper on the subject of "Acquired Meat Intolerance."

Just now there is considerable discussion as to low iodine content of drinking water being an important factor in the production of goitre. I have serious doubts as to the correctness of this view. I am rather inclined to believe that if the investigation is pushed a little farther it will be found that the iodine in the drinking water simply acts as a destroyer of the colon bacilli or a detoxicant of the same and thus indirectly or secondarily only as a goitre preventative.

The foregoing has been presented as preliminary in order that we may approach the problem of treatment in an orderly systematic and rational manner.

TREATMENT

The first thing we try to do when a patient comes to us with a disease of the thyroid gland is to determine whether or not he is suffering from one of the four conditions

above mentioned. In other words we try to make a diagnosis. As soon as it is determined that the patient belongs to one of these four classes and that the condition is not a calcareous cyst we try to determine which one of the three primary etiological factors or what combination of them is responsible for the condition. We try to determine first whether there is any focal infection anywhere in the body, second, whether they have been drinking colon contaminated water or milk or eating colon contaminated vegetables and finally we try to determine whether the patient has either an inherited or acquired meat intolerance. If we find focal infection we eliminate it if possible. If colon infection is present we teach them how to avoid that and finally if the enlarged thyroid is due to meat intolerance we prescribe a diet which has neither meat nor meat extracts and we try to see to it that they adhere rigidly to it. The only animal products they are permitted to consume are milk, cream and butter.

In addition to the above, the treatment which I wish here to describe is the one first recommended by the late Professor Moses Gunn some forty years ago when the use of carbolic acid in antiseptic surgery was at its height. It occurred to Professor Gunn, who was a very close observer, that an adenomatous goitre might possibly be due to some infective agent and it further occurred to him that if carbolic acid externally applied was germicidal it might also be of benefit if injected into a struma. The treatment was used by him and some of his pupils in a considerable number of cases with a fair degree of success but was generally discarded because the percentage of cures was not sufficiently high and because a number of cases thus injected developed abscess of the thyroid gland with subsequent death. Personally I know of two such cases which occurred in the hands of a very prominent Chicago surgeon in the course of one year. These two fatalities became quite generally known among Chicago surgeons and discouraged others in continuing this method of treatment. These deaths were, I believe, due to two causes: First, the old fashioned syringes which were very difficult to sterilize and second because surgeons in general were under the impression that 5% carbolic is germicidal. Thirty-five years ago I did some research work in the bacteriological laboratory of the University of Wisconsin while still a pre-medical

student, on the value of carbolic acid as an antiseptic, which convinced me that 5% aqueous solution of phenol is not a dependable antiseptic as it does not destroy spores. The relatively small per cent of cures was, I believe, due to the lack of thorough comprehension of the causes of goitre and because during the treatment the things that caused the goitre were not removed and consequently the treatment lost much of its effectiveness. It is for this reason that I have insisted on first removing the cause and then using a solution sterilized by heat.

The positive treatment consists of injections of 5% aqueous solution of phenol directly into the enlarged thyroid, with a 1 cc. Luer syringe and a needle about an inch and a quarter long and a 22 gauge. Both of these are carefully sterilized with the wire in the needle and projecting far enough from the pointed end so that the tip of the needle need not be touched when the wire is withdrawn with the wire not projected beyond the shank of the needle so that in withdrawing the wire the inner portion of the needle cannot possibly be contaminated. The neck is carefully sponged off with two separate cotton sponges and alcohol, then the patient is directed to swallow so that the thyroid gland is definitely located, the needle is quickly plunged into the thyroid gland, the patient again directed to swallow, then after a moment or two in order to make sure that the needle has not punctured a large vessel the required amount of sterile carbolic solution is injected directly into the thyroid gland. In the first injection I usually employ 1 cc. and increase 1 cc. at each injection, up to 6 cc. in extreme cases. In case I use more than 3 cc. at one injection I introduce two needles into the most prominent portions of the thyroid gland. The solution which I use is a 5% aqueous solution of phenol. I keep my stock solution in a separate bottle and that for daily use I place in a wide mouthed ordinary new vaseline bottle and sterilize the solution in this latter bottle for 20 minutes in a water bath. This is done every evening and by morning the solution is cool and again ready for use.

THINGS TO BE AVOIDED

1. Infection in the manner above outlined in detail.

2. Injection into the large vessels. This is avoided by using a 22 gauge needle and waiting a few seconds between the time when the needle is plunged into the thyroid and

the time when the injection is begun. If the needle should happen to be in a large vessel the blood will pour out rapidly and the needle can be withdrawn a little or reinserted.

3. Recurrent laryngeal. This accident is most likely to happen towards the end of the treatment when the gland has become very small. It can be avoided by remembering the location of the nerve and by inserting the needle at an angle rather than vertically. If the accident does happen no serious damages will result because the nerve will recover in from four to six weeks. This accident has happened to me several times with nothing but a little fright to the patient and slight inconvenience.

4. Puncture of trachea. This accident is most likely again to happen towards the end of the treatment. Can be avoided by inserting the needle at an angle and by having the patient swallow before starting the injection. When the goitre becomes quite small and there is some danger of puncturing the trachea it is advisable to inject only one drop at first. If the trachea has been punctured the patient will cough violently when the needle can be quickly withdrawn and no harm will result. This has happened to me several times without serious injury.

CONTRA-INDICATIONS

1. Tumors—both malignant and benign
2. Calcifications. The specimen which I present is a complete calcification of the middle lobe of the thyroid. In such a case as this injection would, of course, be impossible.
3. Calcareous Cysts. The only two failures which I have had with this treatment have been with this class of cases. The first patient, an old lady with a very large calcareous cyst came to me. I examined the neck carefully, found the deposits in the cyst wall and told her frankly that she could not be relieved of her trouble by the injection method. She plead with me asking me to try because I had cured several of her friends of large goitres by the injection method. After withdrawing from 20 to 30 cc. on six consecutive sittings and then injecting it with carbolic acid she saw the futility of the method and was willing to submit to operation. In one other case I mistook a cyst with calcareous wall for a simple cyst and failed to give relief by injections. This patient has not yet submitted to an operation but probably will do so in the near future.

4. Impending Strangulation. If there is already considerable difficulty in breathing due to obstruction to the trachea do not use the injection method because the injection does temporarily increase the enlargement of the thyroid slightly. Here is a specimen from an extreme case of this kind. It comes from a 17 year old boy who was brought to me on January 2, 1920. About a year previously the boy had applied to the school physician for a license to work. Instead the school physician advised him to have his goitre removed. He was then already having great difficulty with his respiration. He did not follow the advice because his mother was a Christian Scientist and when he spoke of going to a doctor she would have hysterics. On the above date he was brought to me in a taxicab and he was on the point of strangulation. The plight of this boy was pitiful. I have never seen such labored respirations. The ensiform cartilage actually touched the spinal column with each inspiration. My office is one block from the hospital. I rushed him to the hospital and by the time he could be placed on the table he was unconscious and in exodus. I was almost at the point of not even attempting to operate but I made a quick incision and dissection removing this specimen. Fortunately his heart kept beating feebly though his respirations had entirely ceased. When I put in the last stitch he showed signs of life and in a short time was conscious. His exertion had been so extreme and his exhaustion so great that he slept almost continuously for thirty-six hours. The boy was literally saved from the brink of death to which he had been led by a misguided mother.

The above four contra-indications are very positive and important but fortunately not often met with.

STATISTICS

I did my first goitre operation twenty-seven years ago and did it successfully. Like most surgeons for a time I operated more and more goitre cases up until eight years ago. Then I did some serious thinking and came to the conclusion that we were doing too many goitre operations. For the last eight years I have been gradually getting away from thyroidectomies. First the simple adenomatous, then the smaller and less severe exophthalmic and toxic adenomatous ones and the last couple of years all except those excluded by the above four contra-in-

dications. I think that 98% of the above four types of goitre can be cured without operation by first removing the cause and then injecting a sterile 5% aqueous solution of phenol under aseptic precautions into the thyroid gland. I have injected 182 cases of the above four classes without a death, and without a failure except the two cases reported above and two cases of exophthalmic goitres that preferred operations after the first few injections. Seven of the cases successfully treated had previously been operated upon, two twice and five once.

CASE HISTORIES

Miss C. A., age 37, appeared for treatment 1-25-24. Has had enlarged thyroid for past two years. No symptoms except that she has always been rather nervous. Numerous acne on face; all lobes of thyroid markedly enlarged; especially right and middle. Greatest circumference of neck 15½ inches. Acne treated with ammoniated mercury ointment and given four injections of 5% phenol at intervals of a week. On 3-24-24 appeared for examination. Greatest circumference of neck 14 inches. No evidence of goitre to be found.

H. E. S., age 50, 7-31-22. Patient's history negative until two years ago when patient became very anemic and also markedly dyspneic. After two months improved but did not become normal. About four months later developed marked dyspnea with rapidly developing goitre. Lost weight and strength; excruciating pain in eyes. Marked oedema of feet and ankles. Pain in chest more marked on lying down. Best weight 155, present weight 130. Examination revealed emaciated individual, marked tremor of eyelids, slight exophthalmus. Tongue thickly coated, marked enlargement of all lobes of thyroid gland. Heart tone clear, heart regular, pulse 130, no pulse deficit. Soft systolic mitral murmur. In hospital six weeks with weekly carbolic acid injections. On discharge average rate of pulse 90 but occasional periods when it would remain around 130 for some time. Injections continued at home for four weeks at the end of which time pulse was persistently below 90; patient resumed work at the end of another two weeks. Permanently relieved until killed in railroad accident three months later.

Miss M. S., age 26. First noticed goitre at the age of 16. Tonsillectomy four years ago. Tongue slightly coated, teeth good repair. Left lobe of thyroid sub-sternal, size of pullet's egg. Very firm. Apex beat 4th interspace left nipple line, cardiac dullness slightly increased. Systolic murmur over apex. On introducing a hypodermic needle into goitre 10 cc. of coffee colored fluid removed; 4 cc. of 5% carbolic acid injected into goitre. One week later 20 cc. of dark colored fluid withdrawn. Again 4 cc. of 5% carbolic acid injected. One week later 5 cc. dark colored fluid withdrawn and again 4 cc. of 5% carbolic acid injected. After the fifth injection the goitre had practically disappeared.

Miss M. O., age 17. Soft flabby fat nervous girl with marked exophthalmus. Very large diffused thyroid involving all lobes. First started treatment on July 5, 1923. Had 16 injections. At first every

week, later every two weeks and finally every four weeks. Examined May 4, 1924. Recovery complete.

Miss S. B., age 50. First came to my partner, Dr. Lundgren, on the ninth day of May, 1921. On admission to the hospital her pulse was irregular and varied between 108 and 112. The heart was extremely irregular and with the stethoscope varied between 160 and 170. Pulse deficit 50-60. Patient was extremely nervous and could not sleep. On May 17 patient had an injection with hypodermic needle into the right lobe of the thyroid of 1 cc., 5% solution of carbolic acid. Her heart and pulse improved and on May 24 she was given 2 cc. of the same solution into the thyroid gland. On May 29, when the patient was examined, her pulse beat was 72, fairly regular, intermitting about every fifth or sixth beat. Her heart beat was 84 as determined by stethoscope examination. She was sleeping very well and greatly improved. In talking the matter over with her she was told that it would be necessary for her to remain under treatment, continuing the carbolic acid injections weekly for about three months in order to secure complete recovery. She protested against the length of time and requested an operation instead which was performed on May 31. The right lobe of the thyroid, the size of a duck's egg, and the middle lobe, the size of an English walnut, were removed. The operation was performed without difficulty and without any complications. There was very little bleeding, the right recurrent laryngeal was seen and the forceps applied to its accompanying vessel without injuring the nerve. Vessels ligated in ordinary manner, wound closed with two cigarette drains through stab wound. Patient left the table in good condition. Not cyanosed, pulse quite regular, strong 106 beats per minute. On incising the right lobe which had been injected twice two lima bean sized necrotic areas were visible to the naked eye which on microscopic examination showed fatty degeneration.

The question of expense is quite an important one. For some years the problem of medical economics has interested me quite as much as has any surgical procedure. If you can keep these kind of patients on the firing line and keep them working and earning money instead of putting them to bed and disabling them for long periods of time they can pay reasonable fees and are very glad to do it. One surgeon said to a friend of mine, "What is Dr. Ochsner trying to do, rob us of our legitimate fees?" No. I am trying to put more legitimate money into the pockets of the medical profession and show the medical profession how to render greater service to the public. I used to think that a small adenomatous goitre with or without degeneration in the center was of no particular importance to the patient, that they were not unfavorably affected by it but I have changed my mind. Almost everyone of these patients is somewhat below par and you will not get anywhere with your tonics

until you rid them of their goitres particularly if they show hemorrhagic degeneration. We draw this bloody fluid off, relieve the tension, put in a few cc. of 5% carbolic acid and within a few weeks they show definite improvement and will tell you "I have not felt so well in five years." I have had this happen many times. Last week I had a patient who when she first came to me was about 75% efficient. I was giving her a fourth injection when she said without any prompting, "I have not felt so peppy in five years as I am feeling now." If you can cure ten of these cases where you have been curing only the one most severe one you will be more valuable to society and you will make more money yourselves.

ADVANTAGES OVER THYROIDECTOMY

1. No danger to parathyroids.
2. No danger of producing artificial myxedema.
3. No serious danger to recurrent laryngeal.
4. No operative scar.
5. Larger per cent of cures.
6. No recurrences.
7. Lessened morbidity.
8. Lessened mortality.
9. Lessened expense to patient.
10. Greater applicability.

This report represents my own personal experience with goitre for a period of thirty years. No effort is here made to review the literature on goitre as this has been ably performed by a number of reviewers. I here attempt only to describe in detail a method and give the results in order to popularize a method of treatment which I believe is much simpler, much less expensive to the patient both in time and money, and fraught with much less danger than any method heretofore devised.

DISCUSSION

B. B. Davis, M. D., Omaha, Nebraska: I do not believe a paper like this should be dismissed without some discussion. I feel personally very grateful to Dr. Ochsner for being here and reading this paper. He has given us a lot of food for thought. Many of the things he has discussed today have not had time to sink in, but I intend to think them over a great deal. He has given me a different slant from what I have had for a long time in regard to some of these things, so far as pathology and etiology are concerned.

In regard to etiology, I question whether the deficiency-iodin men or the men who take the attitude of Dr. Ochsner in regard to focal infection are en-

tirely right. I have been led to believe we have two elements that must be present to develop goitre. One is, without any doubt, one of the things he has mentioned—focal infection. The bacillus coli, or the presence of too much protein in the food. I am free to admit one of these elements may be present in the development of these goitres. But I am also very much inclined to believe the element of a deficiency of iodine which has been discussed so much of late cuts a figure and the two must be combined, because of the experience in giving iodine in these cases.

For instance, going back to the early experimentation along this line in Akron, Ohio, by Drs. Marine and Lenhart: They went into the schools and used it in the form of sodium iodide for ten days, giving thirty grains to these children. If these children had a small amount of goitre just starting, it was found to pass away; while those who had this treatment did not develop goitre in the manner they had been developing it year after year before that, without any change in environment or drinking water or food or mode of living. It seems to me that deficiency of iodine cuts a figure in the causation of goitre.

I am always fond of bringing up the Michigan sheep. I have been a farmer and appreciate the farmer's standpoint. The Michigan farmers depend largely on sheep as a means of livelihood. A few years ago goitre became rampant among the sheep of Michigan. A good many farmers sold their sheep. About that time they discovered salt in Michigan—not a very pure variety. They began feeding that salt which was found to contain a lot of iodine, and the goitre began to disappear. I have no doubt the sheep continued to have the same environment they had had before.

There is one point Dr. Ochsner made I wish to emphasize, and that is in regard to toxic adenomas. According to statistics, it is fourteen to eighteen years before they get the hyperthyroid symptoms. I do not believe these symptoms come on all at once. I know some of those who have not yet developed hyperthyroidism are below par. I believe the toxic symptoms are present all the time. After a time from the cumulative effect of constant absorption of toxic material the nervous control is lost.

C. A. Roeder, M. D., Omaha: Unfortunately, I did not hear the first part of Doctor Ochsner's paper, but from what I did hear, I feel that he has offered us something of value, at least to the extent of alleviating some of our very toxic goiters. The subject of goiter is such an uncertain one and there are so many conflicting theories and facts that it is always open to the freest discussion. I am inclined to feel that iodine has a great deal to do with goiters, particularly from the work of Marine, who has plainly demonstrated that iodine prevents colloid goiters, and of the fact that one rarely sees goiters along the seashore, particularly where the kelp beds are. I was in Santa Barbara, California, recently and asked the hospitals how many goiters they observed among the natives. They replied that they practically never, if ever, saw a goiter excepting in patients coming from other districts. The goiter band starts around Washington and drops south to Kansas, going north again through the Great Lakes Basin. One sees very few goiters down south of this belt, so there must be some geological fac-

tor undetermined as yet. It is very interesting to note that there are at least twenty times as many goiters in women as in men, and yet men eat more meat. Outside of the goiter belt people eat practically as much meat, so the meat protein factor is still one unsettled. If the colon bacillus plays such a marked part as an etiological factor, one would expect to see many goiters along the paths of sewage drainage, for instance along the Mississippi River. One rarely sees goiters in colored people, who often are not too clean, and in fact that relation of cleanliness, which would go with colon bacillus contamination, has not seemed to prove anything definite.

Doctor Ochsner's paper is a most interesting one, particularly to the general practitioners who are able to inject these goiters much more easily than operate upon them. One would rather have a syringe containing phenol used upon him than to have an operation performed by an untrained surgeon. It is a method that should be given a trial and, no doubt, will be of a great deal of benefit, particularly in alleviating the more toxic types. I would like to have Doctor Ochsner describe a little more in detail the pathology in the gland following these injections. The results of surgery of goiters is due to the fact that nearly all, if not all, of the pathological tissue is removed. It not only cuts down the toxemia but removes the enlarged gland. In order to be successful, one would naturally feel that any type of injections would have to accomplish the same result. I would like to have Doctor Ochsner discuss this picture of the gland following the injection, and to take this opportunity of thanking him for his most interesting paper.

Lyman J. Cook, M. D., Omaha, Nebraska: If the patient comes to the office with definite focal infection—perhaps large tonsils or teeth that need attention—and wants her goitre treated but nothing done to tonsils or teeth, I wish to ask the Doctor if he would proceed with the carbolic acid method of treatment and expect to get results?

Dr. Ochsner: I want to thank the gentlemen for their discussion. It is one way of my learning something.

I have had some of these people come to me with focal infections such as carious teeth, infected tonsils, infected gall bladder, lacerated cervixes, etc. I have always insisted that the focal infection be first attended to because I have felt that while injecting the thyroid might help them temporarily it would not result in a permanent cure and hence not be satisfactory to the patient, would give the method a black eye and hence not be satisfactory to the surgeon. In answer to the question about artificial myxedema I had intended to speak about that in my extemporaneous remarks. There is practically no danger because you can watch the patient from week to week and when you think sufficient amount of the thyroid tissue is destroyed you can interrupt treatment for a month and watch the effect. This is a most serious condition and one that occurs not infrequently following operation. I have two such cases under treatment now and they are a nuisance to the physician, to their relatives and friends and to themselves. And I am afraid from the present tendency the number of cases will rapidly increase. A patient came to me the other day with the following story: She went to a surgeon about her goi-

tre who wanted to operate. She asked him, "Is there no danger of recurrence?" He answered, "No. We take out so much now that it can't recur." This is very dangerous because it is almost sure to result in a larger number of cases of myxedema. I am very doubtful whether the absence of iodine in the drinking water has as much to do with the development of goitre as some seem to think.

In answer to the question as to the effect of the carbolic acid injection I will say that in the two cases where thyroidectomies were performed after carbolic acid injection small points of focal necrosis were discovered both macroscopically and microscopically. However, the solution must be an aqueous solution. Both glycerine and alcohol prevent the phenol from producing the necrosis.

DUODENITIS*

C. A. Roeder, M. D., Omaha, Nebr.

INTRODUCTION

The object of this paper is to call your attention to a condition rarely mentioned in the literature and almost if not entirely unheard of by most of the profession. My experience of sixteen years has demonstrated beyond all doubt to me that inflammation of the first portion of the duodenum, duodenitis, is not of rare occurrence. In considering duodenitis, a brief generalization of some features of the gastro-intestinal tract is essential as an introduction.

The acute and chronic inflammatory pathologies, including the gangrenes and phlegmones, occur throughout the alimentary tract, but attacking certain areas far more than others. Our conceptions of the areas involved and the types of inflammations are gradually changing owing, perhaps, more to modern abdominal surgery, with its study of the living, than to necropsy study with its study of the dead. As an example it is now known that true acute and chronic gastritis, gastro-enteritis, and colitis are not present nearly as frequently as once supposed, the true cause of these clinical pictures being definitely proven to be found, in the vast majority of cases, in the appendix, gall bladder, pancreas, liver, peptic ulcers, and the neurones.

One can not question the fact that gastritis, gastro-enteritis and colitis do occasionally occur, but even when present the inflammatory pathology is now looked upon as occurring in more localized areas in contradistinction to the older conception in which it was thought that the lesion was much more generalized.

The position, mobility, blood supply, lymphatic drainage, and the type of mucous membrane in the various portions of the alimentary tract no doubt play no insignificant role as predisposing factors in acquiring the

acute and chronic inflammations. The greater the mobility, blood supply, rugous formation of the mucosa and the more independent the lymphatic drainage the less tendency there is to acquire infection. The first portion of the duodenum unfortunately possesses none of these and must be looked upon as being immobilized more than any other segment, as possessing a less free blood supply, as possessing a mucosa without rugous formation and most significant of all to be lying in a network of lymphatic channels which drain the most frequently infected areas in the abdominal cavity, viz; the appendix and the gall bladder. The duodenum when carried from the mid-line to the right side during the embryological transposition of the alimentary tract was not only thrown directly into the thickest bed of lymphatic channels already draining areas most susceptible to infection, but was fixed to the posterior abdominal wall to such an extent that it lost the greatest protective factors the alimentary tract possesses, viz; mobility, an independent lymphatic system, and a free blood supply.

The ileo-colic portion of the gastro-intestinal tract, the liver, with its ducts and gall bladder, the pancreas and its ducts, and the pyloro-duodenal segment, are all more or less connected by the portal blood and the right sided lymphatic stream. The work of Evarts Graham* on proving the pathway of infection from the ileo-colic segment to the gall bladder, and the recent work of Braithwaite** of England, which demonstrates a direct lymphatic stream from the ileo-colic segment to the duodenum, has definitely laid the foundation of modern living inflammatory pathology in the abdominal cavity. Up to the time of the experimental demonstrations of these two men, surgeons could only assume the ileo-colic segment to be a possible etiological

*Read before the Annual meeting of the Nebraska State Medical Association, Omaha, May 13-15, 1924.

* Archives of Surgery, January, 1922.

** British Journal of Surgery, July, 1923.

factor of upper abdominal chronic infections. Too few, even today, realize that, as a rule, no one area in the upper abdomen is involved and that a new terminology must be advanced to cover these combined chronic inflammations of the liver with its ducts and gall bladder, the stomach and duodenum, the pancreas with its ducts, and the spleen. There is no more direct proof of this statement than the mere fact that a simple cholecystectomy for cholecystitis, one unit of a generalized infection, too often does not cure the patient. The success of the operation of cholecystectomy depends entirely upon the amount of associated pathology present, and the operation must not be looked upon as final in the treatment of patients afflicted with this dominating lesion.

I am firmly convinced from many opportunities for inspecting the duodenum since 1908 that duodenitis is of not infrequent occurrence and, excluding appendicitis, and perhaps "patchy" gastritis, occurs more frequently than inflammation of any other portion of the alimentary tract. Owing to the fact that duodenitis is practically unknown in the literature, and rarely spoken of, any statement as to its frequency must be looked upon with circumspection.

ETIOLOGY AND PATHOLOGY

There are at least two sources of duodenitis; viz., (1) from irritating substances ejected by the stomach; the inflammation, chemical or bacterial, or both, starting in the mucosa and submucosa; and (2) from infections coming from without, via the lymphatic stream from the ileo-colic segment, the biliary tract and the pancreas; the inflammation here starting in the layers behind the mucosa. The types of duodenitis are: (1) bacterial; (2) chemical; and (3) traumatic. The traumatic type most frequently follows cholecystectomy with drainage. The chemical type follows, frequently, burns of the skin, which cause duodenitis as well as duodenal ulcer.

The most frequent type of duodenitis is the chronic bacterial, originating from sources previously infected and must be looked upon as only a part of a more generalized infection in the ileo-colic segment, liver and bile passages and pancreas. The acute non-suppurative type is recognized by a very reddened duodenum, generally with cobweb or plastic inflammatory peritoneal adhesions surrounding it. The acute suppurative type,

which I have never seen, is described as a greatly swollen duodenum, very tense, with or without inflammatory peritoneal adhesions and at times surrounded with a serous exudate; it is of a gray purulent color or a deep purplish hue. The chronic type, of which I have seen numerous examples is characterized by cobweb like peritoneal adhesions surrounding the first portion, attached at times to the liver and to the gall bladder. The walls of the duodenum feel thickened but a comparison with the normal being impossible, the degree is immeasurable. The peritoneal coat seems more congested than normal, and taking everything into consideration, the chronic type resembles chronic appendicitis, which is more easily recognized in situ than under the microscope. In studying any pathological condition the picture in situ tells a far better story than the removed specimen or the stained microscopic view. In my cases of duodenitis I have resected for microscopic study no specimens for the very reason just stated, enhanced by the apprehension of a duodenal leak which offers no compensation. One can, with experience, diagnose duodenitis in situ as easily as cholecystitis and appendicitis.

I wish now to report examples of primary chemical, traumatic and bacterial duodenitis and also examples of ulcer following duodenitis. In the past sixteen years I have observed the duodenum very closely at every opportunity and feel positive of having seen thirty definite examples, twenty-two in males and eight in females, all in the second, third and fourth decades.

CHEMICAL DUODENITIS

Example I—Male, age 35, had used alcohol to excess for over ten years. The present attack followed a continuous intoxication of seven days and was characterized by vomiting every few hours of highly acid and blood stained fluid with considerable mucus. The condition was diagnosed as an acute alcoholic gastritis, and on the tenth day of unrelieved vomiting, dehydration and exhaustion, an acute parenchymatous nephritis became evident. Two days later an autopsy disclosed the nephritis and a very marked congestion of the first four inches of the duodenum surrounded by very thin and congested peritoneal adhesions. The stomach felt and appeared absolutely normal. The case occurred during an internship fifteen years ago when gastritis was diagnosed far more frequently than at present. I never have forgotten the inflamed appearance of that duodenum and the normal appearance of the stomach. From my present experience, I think this patient had an acute alcoholic duodenitis.

The present custom of serving fruit and gin cocktails, when taken in excess, no doubt results in cocktail duodenitis very frequently.

Example II—In 1912, during my early practice, a girl of twenty was brought to St. Francis Hospital at Grand Island, Nebraska, after swallowing one ounce of formalin. About thirty minutes after swallowing this fluid gastric lavage was given but with apparently no effect. About four hours later vomiting of slightly blood stained fluid, with mucus, set in and in forty-eight hours signs of upper abdominal peritonitis were marked. Anticipating a perforation of the stomach, a laparotomy was performed which disclosed, a perfectly normal looking and feeling stomach, but a very reddened duodenum with an abundance of peri-duodenal inflammatory exudate surrounded by acute inflammatory adhesions, a perfect example of chemical duodenitis. Under conservative treatment the patient slowly recovered.

We have here two examples of chemical duodenitis due to the powerful and resistant stomach emptying its irritating contents rapidly into the sensitive duodenum, the mucosa of which does not lie free in rugae as that in the stomach, and with a blood supply not too abundant. The term gastritis was applied in both instances, because vomiting and retching of blood stained fluids dominated the clinical picture. The spastic obstruction of the duodenum no doubt caused the vomiting.

TRAUMATIC DUODENITIS OR DUODENITIS FOLLOWING CHOLECYSTECTOMY

Example III—Male, age 35, presented a picture resembling chronic cholecystitis. The x-ray reported the duodenum and stomach negative. The acids were Free 10, Total 15. A test for occult blood in the stool was not made. The operation disclosed a typically associated appendicitis and hepatocholecystitis. The stomach, duodenum, and pancreas appeared and felt negative. A congenital band of peritoneum extended from the gall bladder to the duodenum. The appendix and gall bladder were removed without drainage, the patient making an excellent operative recovery. Six months later, however, he returned with a typical duodenal ulcer history which began about three weeks after he left the hospital. The x-ray reported a spastic duodenum without persisting deformity. The acids were Free 50, Total 70. At the second operation, during which I expected to find a duodenal ulcer, I found a very congested duodenum in its first portion, surrounded by numerous cobweb inflammatory adhesions. The duodenum was not adhered to the previous gall bladder site. The abdomen was closed and the patient returned to the family physician who applied the Sippy ulcer treatment with excellent results.

Example IV—Female, age 35, of the non-ptotic type, presented a history of upper abdominal distress for the past two years, related to the gastrointestinal tract. Since childhood she had had spells of stomach trouble and attacks of tonsillitis. The x-ray report was negative, the gastric contents showed Free HCL 18, T. A. 30. At operation a chronic appendicitis and a sub-acute (?) cholecystitis were found. The gall bladder was free of all accessory peritoneal bands. The duodenum, stomach and pancreas were negative. Following an appendectomy

and cholecystectomy without drainage, the results were only fair. Complete recovery did not come and one year later this patient returned with a typical duodenal ulcer history. The x-ray showed a very spastic duodenum without an area of persisting deformity and the acids were Free HCL 35, T. A. 60. Note the difference from the previous examination. A test for occult blood in the stool was very pronounced. At the second operation, at which I expected to find a duodenal ulcer, I found a very marked congestion of the duodenum, with thickening of the walls and a definite, chronic inflammation of the head of the pancreas. The duodenum was "sticky" on its surface and adhered lightly to the surrounding peritoneum, and to the liver in an area 1 c. m. in diameter where the previous cholecystectomy had been performed. The stomach was negative and seeing no indication for further surgical procedure, I closed the abdomen and referred the patient back to her family physician with the advice to apply the Sippy treatment. Two years later the patient wrote to me stating that she was feeling better than at any previous date.

Here we have two examples of a duodenitis following, directly or indirectly, the operation of cholecystectomy. Did the trauma from the operation or a stirring up of a residual infection produce the duodenitis?

The following examples of duodenitis presented a picture resembling a confusion between a sub-acute cholecystitis and a small perforating duodenal ulcer.

Example V—A female, age 40, had had a chronic remittent digestive upset for ten years. About forty-eight hours before I saw her the present attack began with right upper abdominal pain, vomiting, considerable distention and a temperature of 102, pulse 100 at 4:30 P. M. Tenderness was marked throughout the upper abdomen and the leucocytes were 15,000.

The operation disclosed a negative stomach, and with an appendix and gall bladder suspiciously chronically inflamed. The duodenum was buried in inflammatory adhesions and surrounded also by the omentum and hepatic flexure. These adhesions were easily brushed off the duodenum which was very congested and bled freely from the peritoneal surface. The walls were thickened but no perforation or ulcer were present. A diagnosis of sub-acute duodenitis was made and the abdomen closed. The result under an ulcer diet under the care of the family physician was perfect.

Example VI—A female, age 25, had had an appendectomy for recurring attacks of subacute appendicitis four years before the present trouble. Tonsillitis had been her main source of illness since childhood—a tonsillectomy had always been refused. The present trouble began two years after the appendectomy and was characterized by "heart burn", acid stomach, food ease but distress coming two hours after eating, accompanied by gas and frequent regurgitation. No nausea or vomiting ever occurred. The x-ray showed a very spastic duodenum, relieved partly by belladonna and the acids were Free 60, Total 75. Tonsillectomy was refused as a preliminary and on exploration I expected to find a duodenal ulcer or a cholecystitis. The gall bladder

and liver were suspiciously infected but the duodenum was definitely chronically infected. It was surrounded by many cobweb adhesions and appeared more congested than normal and far more immobilized than the usual duodenum. Loosening up the duodenum with the finger resulted in free oozing from the peritoneal surface.

The operative recovery was uneventful but the results six months later were unsatisfactory. The duodenitis will probably go on to ulceration particularly if a Sippy regime and a tonsillectomy are not accepted.

DUODENAL ULCER FOLLOWING DUODENITIS

Example VII—Male, age 42, gave a history of general upper abdominal distress in spells for four years, with soreness and tenderness to the right of the mid-line in the epigastrium, extending several inches downward. His appendix had been removed during an acute attack five years previously and his recovery was incomplete, presenting the above symptomatology. His history, physical examination, x-ray and laboratory reports suggested both cholecystitis and duodenal ulcer. The x-ray reported a very spastic duodenum which was partly relieved by belladonna. There was no point of persisting deformity. The gastric contents showed Free HCL 45, Total 90; the stool gave a most pronounced test for occult blood.

At operation a definitely chronic cholecystitis was found with a surrounding area of marked hepatitis. The pancreas and stomach were negative but the duodenum was intensely congested and surrounded by a few cobweb inflammatory adhesions. The gall bladder was removed without drainage and in the post-operative notes I strongly emphasized the presence of what I termed duodenitis. The postoperative recovery was again incomplete and five months later a more typical duodenal ulcer history was presented and the x-ray found a definite and persisting deformity in the first portion of the duodenum. The stomach contents showed Free HCL 38, T. A. 60; note that the acidity had dropped. A test for occult blood in the stool was not made.

Ten months following the cholecystectomy, I again opened the abdomen in the presence of Dr. Ralph Richards of Salt Lake City. I remarked before starting the operation that a very marked duodenitis was present at the previous operation of cholecystectomy. A large duodenal ulcer (better termed a scar tissue defect) was found in the anemic spot, requiring a gastro-enterostomy.

Example VIII—Male, age 36, with a history of many severe attacks of tonsillitis, complained of upper abdominal distress for two years past. The history and examination was a mixture of cholecystitis and duodenal ulcer; the x-ray showed a very spastic duodenum with no point of persisting deformity. The gastric contents showed Free HCL 48, T. A. 90; the stool gave a faint test for occult blood. At operation a definitely chronic cholecystitis and chronic appendicitis were found, with a chronic hepatitis surrounding the gall bladder. The stomach and pancreas were negative but the duodenum was intensely congested, walls thickened and surrounded by many cobweb inflammatory adhesions. An appendectomy and cholecystectomy without drainage were performed, and in the post-operative notes, duodenitis was emphasized as accompanying the

chronic inflammation of the appendix and gall bladder.

The patient felt quite well for two months, when symptoms resembling duodenal ulcer returned. The x-ray six months after the operation disclosed a definite deformity in the duodenum and the acids were Free HCL 30, T. A. T. A. 50; note again how the acidity had dropped. There was no occult blood in the stool. At the second operation a duodenal ulcer in the anemic spot was found, requiring a gastro-enterostomy.

Here we have two perfect examples of chronic duodenitis preceding duodenal ulcer.

DIAGNOSIS

1. The family history is important because the tendency to any disease is frequently inherited. Particularly do I inquire as to chronic intra-abdominal distress and dyspepsia, what operations if any were performed and the nature of the cause of any deaths.

2. In the past history of the patient, attacks of abdominal pain or attacks of gastrointestinal disturbance even back in childhood are important. We will awaken to the fact some day that nearly everyone has had a varying degree of appendicitis or ileo-colitis and that this area is the greatest cause of upper abdominal disease.

3. In the present history of the patient the duration on the average has not been as long as duodenal ulcer, generally a few years; the condition is more continuous, less prone to recession. Although there is a history of food ease, the complete disappearance of distress is not so marked as in duodenal ulcer. Sour, acid, irritating foods and heavy meals have a marked distressing effect. As in duodenal ulcer there is a feeling of "heart burn", gas, sour belching, but a normal appetite. The story of duodenal ulcer is simulated to a marked extent. The early history of duodenal ulcer is often that of duodenitis.

4. There is a complaint of soreness in the right upper quadrant, often increased by deep inspiration, relieved frequently by lying down. Tenderness is more toward the mid-line and lower than in gall bladder disease.

5. The acids are above the usual, generally higher than in ulcer. In gall bladder disease with duodenitis I have found high acid readings. This may account for the fact that about one-fourth of cases of cholecystitis have acid readings above the usual.

6. The x-ray generally shows a spastic duodenum without a point of persisting deformity. Large doses of belladonna tend to relieve this.

7. At operation the appendix, gall bladder, liver, pancreas and lymph nodes frequently show evidences of chronic inflammation. Thin peritoneal adhesions of an inflammatory nature are frequently present. The normal duodenum is of a darker hue than the stomach and one must be familiar with it. When inflamed it is congested, of a darker color and feels oedematous and the walls feel thicker than normal. It is much less mobile.

—520 Bankers Reserve Life Bldg.

DISCUSSION

Dr. H. M. Hepperlen, Beatrice, Nebr.: The duodenum is the dumping ground for both stomach and liver. Infections from the liver ducts no doubt play a big part in duodenitis, especially where the hepatic duct is involved. Those cases when typical rarely get well and are always puzzlers to both physicians and surgeons.

H. W. Benson, M. D., Oakland, Nebr.: I want to thank Dr. Roeder very much for bringing this important subject to the attention of this society. I think he can see these things after we get through with them as general practitioners. He has a better opportunity to visualize the pathological conditions resulting from what we see as an acute condition—and often do not sufficiently appreciate.

During 1922, the country was flooded with cases of acute infectious jaundice. How much of an after effect do these cases leave on the duodenum?

Last October at the district meeting at Blair, I reported fifteen cases of intestinal infection in which it was limited to the duodenum, apparently. Subsequently I had one more case. With your permission, I will run over a few of the cardinal things about that class of cases. The site of the infection was as large as the palm of the hand in the duodenum, which was verified fluoroscopically on several oc-

casions—putting the patient in front of the fluoroscope and giving a barium meal and palpating the duodenum. They did not come to postmortem so I cannot say what the pathological aspect would be.

I will read a typical history of one case presented at that time.

Young man aged 22, sick nine days, had a severe chill on the way to my office, at which time temperature was 104, pulse 120, tenderness limited to region of duodenum, bad breath, furred tongue, looked very sick. Two blood cultures negative to microorganisms. Wassermann Negative. Two tests negative to typhoid and paratyphoid. Stools black green, negative to occult blood tests. Bowel action sluggish. Urine normal, negative to bile test. No rose spots or enlarged liver or spleen. No tympanites. Neuritic pains quite severe, but gradually subsiding in about two weeks. Duration of fever five weeks after I first saw him or a total of over six weeks—no paralyses or change in the reflexes at any time. Von Pirquet tests negative.

Blood count; R. B. C. 5,200,000 to 5,600,000.

W. B. C. 8,500 to 11,200.

Differential: Polye 43.

Lymph. 55.

Trans. 1.

E. O. S. 1.

These laboratory findings were checked by four different laboratory experts. The characteristic thing I found was that these cases all conformed to these general findings; that is, the neuritic pains, the localized pain in duodenum, and the practically normal blood count, but with a definite increase in the lymphocytes, particularly the small lymphocytes.

It occurs to me in listening to Dr. Roeder's paper—Are these cases the beginning of what he sees? I should like to have others give it further thought to see if they are not the acute beginning of the chronic cases the surgeon sees.

DIARRHOEA IN INFANCY AND IN EARLY CHILDHOOD*

E. V. Wiedman, M. D., Lincoln, Neb.

Diarrhea like vomiting is only a symptom, yet when we stop to consider that approximately 1-3 of all the deaths occurring during the first year of life is due directly or indirectly to this one symptom, it is a condition which should receive the most serious consideration no matter how mild the case. The gravity of this can best be appreciated by a glance at a chart from Holt's recent edition.

In New York City there were a total of 12,439 deaths from measles, scarlet, pertussis, typhoid, diphtheria. For this same period there were 13,351 deaths under 2 years of age from diarrheal conditions alone. This alone is a significant fact.

The term diarrhea, is used to include all

conditions attended by frequent loose evacuations of the bowels. These depend upon an

Deaths in N. Y. City for Five Years:

Measles, all ages.....	2794
Scarlet Fever, all ages.....	749
Pertussis, all ages.....	2279
Typhoid Fever, all ages.....	899
Diphtheria, all ages.....	5718

Total	12,439
Diarrheal Disease, under 2 years.....	13,351

Chart No. 1

increase in peristalsis and in the intestinal secretions.

Let us consider briefly the etiological factors: The great bulk of all diarrheal conditions occurs during the first year of life, the curve falling rapidly during the second year,

*Read before the Lancaster County Medical Society, April 19, 1924.

so that after this second year of life susceptibility to this disease is greatly lessened.

Season plays a very important role. While diarrheas are present at all times of the year, a charted table from Sedgewick Scherr apply very aptly to this section of the country; (Scherr & Sed p. 92) showing that the maximum number is present in August and September. And yet some of our most severe

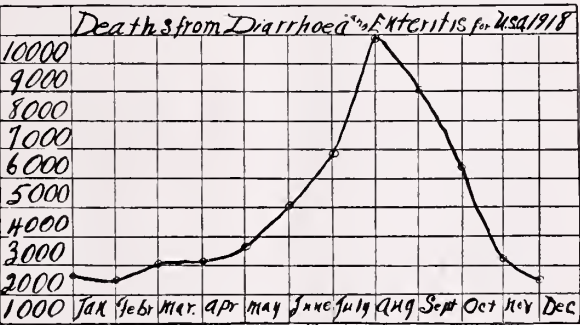


Chart No. 2

chronic diarrheal conditions are seen in October. This I think is accounted for in the extreme hot temperature for August. September with extreme hot days and cold nights. This subjects the infant to such rapid changes in temperature that the infant is chilled at night and overheated in the day time. From the most recent study of this question the conclusion seems irresistible that heat itself has a direct injurious effect on the infant. It seems to act as a powerful depressant of the vital forces, disturbing metabolism, causing indigestion, vomiting and diarrhea. While such factors as unhygienic surroundings, impure and improper feeding play a part, they are present at all times of the year and are no worse in August and September than any other month. We must, therefore, consider the direct or indirect effects of atmospheric heat as the primary exciting cause of paramount importance, and other conditions, secondary predisposing causes.

The type of feeding instituted during the first year of life is a great etiological factor. Statistics from mortality records show us that the breast fed infant wholly or partially has a great advantage over the artificially fed infant regardless of how efficiently that infant has been fed or how well it has done. Experience has taught us that the diarrhea from breast fed is less severe and much more easily cleared up.

There are many other etiological factors parenteral and enteral, such as spoiled milk,

Table, by Graham of Philadelphia, showing increased mortality in artificially fed infants. Also shows increased mortality with summer heat.

Feeding	Breast	Artificially	Unknown
January	8	21	9
February	9	14	18
March	13	15	21
April	9	13	17
May	10	16	27
June	7	4	50
July	8	155	138
August	28	148	161
September	22	108	71
October	18	56	73
November	11	36	36
December	10	24	34

food, predisposing diseases, such as measles, whooping cough, syphilis, etc.

It must never be forgotten that diarrhea is a protective reaction in which Nature attempts to rid the intestinal tract of deleterious substances. These substances may have been ingested or they may be the result of imperfect enzyme action or be the products of bacterial metabolism.

The normal breast fed infant may have as many as three to four evacuations daily, while the artificially fed may have one to two passages. These vary with each child. The physical characteristics vary with the type of feeding. Generally considered, however, the passages of a baby in good health should lie on the diaper as a homogeneous mass, pasty, deep orange in the case of breast fed, lighter if the food is given artificially prepared, varying with the type of sugar. The odor should not be offensive, neither should it be redolent of acid.

Foul smelling stools suggest the predominance of protein splitting bacteria in the intestinal tract, a condition which may be remedied by diminishing the protein intake, then curtailing the milk ration.

While a putrid foul smelling stool always results from an excess of proteolytic organisms in the child's intestines. There are protein splitting bacteria which do much clinical damage, but whose products have little or no unpleasant odor.

Hill, of Boston, has suggested a classification of diarrheas for the purpose of treatment. He divides them according to their etiology into mechanical, fermentative and infectious diarrheas. This classification can be made more useful if a fourth group, the proteolytic, be added, and if the fermentative diarrheas be considered those which arise from a preponderance of carbohydrate split-

ting bacteria in the intestines. This brings the classification into accord with the etiological factors. We have, therefore, to deal with mechanical, fermentative, proteolytic and infectious diarrheas.

A general scheme of management is useful in the treatment of a case. When we are confronted with a case of diarrhea it is wise to have a careful history and a careful physical examination of both the patient and the stools passed. This will help determine into which etiologic category the case falls. Once this is decided it is well to consider the following questions:

- 1—Is a period of starvation essential?
- 2—What foods may be used to an advantage?
- 3—How are the water needs of the child to be met?
- 4—How shall body temperature be controlled?
- 5—How can rest be obtained for patient?
- 6—What drugs are of value in the treatment of this patient?
- 7—How can we prevent the spread of the infection?

Mechanical diarrheas are much less common during the first year of life, but very common during the second year of life. They always result from the ingestion of unsuitable foods or foreign bodies such as dirt, or paper or from over feeding with undigestible food. For example, large curds from unboiled milk in younger babies act as foreign bodies. A boiling of the milk will easily remove the cause here. Such diarrheas are unaccompanied by fever, toxemia and prostration. The patient is usually restored to normal by a cathartic followed by a fluid diet.

Fermentative diarrheas constitute a large proportion of summer diarrhea, a very prevalent and fatal disease in our larger cities. The general and undirected use of proprietary infant foods high in carbohydrate content, is responsible in many cases. This type is usually of slow onset. Usually there will be a period during which the child regurgitates a greater or smaller amount of sour watery fluid about an hour before meals, and the loose evacuations will have been preceded by transitory seizures of abdominal discomfort. There is usually excoriation of buttocks, at times becoming very severe. If you examine your feeding history you will see a high car-

bohydrate diet. The child will have as high as 25-30 movements a day, the number varying with the severity of the attack. The stools are characteristic in that they are copious watery, of lactic acid odor, with a tendency to, or are green and with much mucous. There is no toxemia and rarely more than a little fever until the child begins to show dehydration, which surely follows if prolonged over many hours, especially so if there is associated vomiting which may often occur.

Treatment—Naturally we withdraw all sugar and feed a protein diet. The advent of dry protein milk has made the treatment of this condition very simple. As a rule, if we switch directly from a high carbohydrate to a protein diet the stools and water loss will be checked within 24 hours. In the meantime it is necessary to crowd water to maintain our water balance. If the case is badly dehydrated I know of no better way to maintain body fluids than by the intra-peritoneal administration of normal saline or Ringer's solution, which can be repeated as often as six hour intervals if necessary. As soon as the diarrhea is checked it is imperative to restore carbohydrates as fast as possible in order that we do not slip over into a proteolytic diarrhea. This must be guarded against. It is important to reach the proper carbohydrate-protein balance as soon as possible. In this type of diarrhea it is seldom necessary to resort to drugs. Even when a physician is called, the case is past the stage or has already had an initial cathartic that would be of value.

Proteolytic diarrhea is characterized by frequent stools of yellowish or brownish color, semisolid or liquid or mixed in consistency. Most often they have an exceedingly foul odor, although this may not always hold true, at times they are practically odorless. These characteristics depend upon the nature of the proteolyzing organism present in the stool, but having little bearing on the mode of treatment. It is a safe rule that diarrheic stools which are not definitely acid nor the result of an infectious ileocolitis, are proteolytic. The severity of proteolytic diarrheas vary. Many are mild and others so severe that they threaten life. In the milder cases anorexia, pallor, sunken, deep-ringed eyes are evident; the temperature may be normal, sub-normal or slightly increased. Pulse and respiration tend to be slow and irregular. The intermittance of the diarrhea is a prominent

feature and in the milder case there will be two or three days of loose stools followed by two or three days of constipation. The distaste for food is marked. They refuse fluids, and often slip into an acidosis. They are usually restless and irritable. An oncoming acidosis is made evident by the forced breathing with deep sighing and irregular breathing. Dehydration is less apparent, but is no less a reality, nor is the need for injection of fluid less urgent. The treatment is perfectly clear: a withdrawal of all protein for 24 or 36 hours, in the meantime give a 10% glucose and water solution. A simple way is to use Karo syrup and water. It should be continued until you have a complete change in bacterial flora, usually 12 to 24 hours is long enough. Protein again is slowly added. The same method of maintaining fluids as in the fermentative diarrhea. Drugs are seldom necessary.

The infectious diarrheas, dysentery and ileocolitis are generalized bacteriemic infections. Their intestinal symptoms are the result of the invasion of the intestinal wall by bacteria whose life processes produce destruction of the mucous membrane. The evidence of this disturbance appears in the bowel movements as blood pus epithelium and masses of necrotic tissue. Those cases which are the most severe are those following an invasion by the dysentery group of bacilli. (The Flexner, Shiga, or Hiss Russel may be the etiologic). It is in the treatment of this etiology that the best results follow the administration of specific sera. The early and ample intravenous injection of polyvalent serum is specific, (a total of 200 c.c. given intravenously in 50 c.c. doses every 5-6 hours, until there is an improvement in the child's condition). It has been quite conclusively proven that dysenteries grown on a protein media are more toxic than those grown on a carbohydrate media, consequently the diet would tend to carbohydrates.

Innumerable drugs are used in struggle against diarrhea, most often unwisely. Frequently they are not only useless, but actually harmful in their effect and they may divert attention from more valuable therapeutic measures. There are a few drugs which have a high reputation and certainly are of value in subacute stages of this disease. They act as inhibitors of bacterial growth in the lumen and on the intestinal wall. In this group is bismuth and animal

charcoal. They should be given in 15 gr. doses for a baby. I have often added powdered belladonna to help allay peristalsis. It should be repeated every three hours.

Intestinal antiseptics are of no value. Calomel is of value if used early. The French pediatricists have proved emitin a valuable adjunct in bacillary dysenteries, a daily hypodermic injection appropriate to the child's weight.

The use of opium by mouth as a remedy in diarrhea has been vigorously opposed, but the value of the drug when properly given, will convince anyone that its usefulness grows with its experience. And this is especially true in subacute and chronic diarrheas. When used, the drug should never be added to a diarrhea mixture. Absolute control through accurate dosage must be maintained. It must not be forgotten that certain infants are exceptionally susceptible to its effects, and yet to obtain an effective result a full dose is necessary. It is wise, therefore, in beginning to use one of the less potent derivatives such as codein in order to determine the child's tolerance. If the patient is found to have a reasonable tolerance, then morphin may be used in appropriate doses. Weight is the best indicator of proper dosage. A child 15 lbs. will usually tolerate 1-10 of the adult dose. Codein may be given in $\frac{1}{2}$ of 1 per cent solution in a dose by mouth proportionate to the weight of the child. If this is not effective in calming the baby or in checking excessive peristalsis and the baby shows no narcotism, change to 1-10 of 1 per cent solution of morphin, measuring the dose to be given by the criterion of weight. Usually a child six months will take 1-20 to 1-24 gr. of codein or 1-30 to 1-40 gr. morphin, repeated not more than once in 24 hours.

There is an old and valuable rule that no patient should be awakened to receive a medicine containing a narcotic. If this rule is followed and opium is not given in a mixture, no bad results can follow doses of the size mentioned.

Atropin is often of value in tenesmus and abdominal cramps. Babies usually tolerate this well and in surprisingly large doses. The treatment of chronic diarrhea is essentially that as above mentioned, in the acute diarrhea, but requires skill and prolonged patience.

Spread and prevention of the disease depends entirely upon the etiology which is familiar to us all and demands no further discussion.

It is impossible to cover all the details of

this condition and much must be omitted, however, I have endeavored to refresh your memory and give what I consider best from recent literature and different clinics that I have had the opportunity of attending.

TREATMENT OF HAY FEVER BY POLLEN EXTRACT INOCULATION*

A. H. Webb, M. D., Lincoln, Nebr.

One's interest in a subject is heightened by personal experience. In the beginning I will state that I had been an acute sufferer from that affliction called hay fever for my whole life time. My first interest in the prophylactic pollen extract treatment of hay fever was in 1915 when I was a patient of Dr. E. B. Manning⁽¹⁾ who was one of the pioneers in this field in this part of the country. The records of the American Hay Fever Prevention Society show that about 1% of the population of the United States is susceptible to hay fever. This means 1,100,000 individuals who are potential patients. This, also, we feel is an important reason for taking into consideration the possibility of hay fever treatment and relief.

Pollen is the etiology of this malady. Variations in the height of the threshold of sensitivity in the various tissues of a given individual may be the factor which determines whether hay fever will result from inhalation and contact from pollen. Many times the sensitiveness to pollen seems to increase with the amount of pollen inhaled, with nasopharyngeal disease or obstruction and with the lowering of an individual's vitality. There also seems to be an hereditary sensitiveness to hay fever in certain persons. The sensitiveness often increases without known cause.

NATURE OF POLLENS

The original idea of Dunbar⁽²⁾ was that pollens contained a certain toxin which when absorbed set up the symptom complex known as hay fever. The pollen theory of Dunbar has been partially disproved by the research in protein sensitiveness. It is now known that the symptoms are due to an absorption of specific proteins.

The amount of pollen necessary to produce symptoms seems to vary very greatly. This accounts for all the varying degrees of response. Infinitesimally minute quantities of pollen only are required to produce irritation with the most sensitive patients. A few pollen grains are quite enough to set up the various manifestations of sensitiveness in these.

The weights of certain pollens have been de-

termined; for instance, 7,000,000 corn pollen grains are required to make 1 gram weight; 20,000,000 rye pollen grains, 1 gram; while 120,000,000 of rag weed pollen grains are required to the gram weight. Many of the more toxic pollen grains are shaped and barbed much as our cocklebur seed pod. This no doubt gives these grains more lifting surface and at the same time there is a tenacious adhesion to the mucous membrane until the albuminous portion has had ample opportunity to absorb.

For experimental purposes pollen is best preserved dry. Dry pollen from 25 to 30 years of age has been shown to be active. Various methods are used to obtain the extracts for treatment. Doubtless these should be kept in fresh stock. Tests are usually made with dry pollen or with the freshly prepared solutions.

TECHNIC OF THE TEST

We feel that so much depends on the accurate testing of cases that the technic of the cutaneous test needs special consideration. The flexor surface of the fore and upper arm are prepared by cleansing with soap and water which is then wiped off with alcohol and allowed to dry. The intradermal method has been used but the results have been quite unsatisfactory, and at the present time we believe most men are using the cutaneous scarification method. For the purpose of scarification, two methods are used. In the one the aim is to remove a very small area of epidermis and leave an oozing surface. This may be achieved by the use of a scalpel or a blunt pointed instrument or by the aid of a Von Pirquet borer. We prefer the latter method and have generally used the Von Pirquet borer. The disadvantage of this method is the fact that it is quite tedious and painful to the patient especially where numerous tests are necessary. It also produces some local trauma. On the other hand, the ease of getting an abraded surface without bleeding as well as the uniform size

*Read before the Annual meeting of the Nebraska State Medical Association, Omaha, May 13-15, 1924.

and depth of the abrasion has decided advantages over the use of the other instruments when one desires to make a comparative study of the urticarial wheals indicating reaction.

Caulfield⁽³⁾ has studied the technic and prefers the incision method drawing the tiniest drop of blood possible. He states that the escape of blood does not prevent the reaction in any degree but he finds it preferable to draw only the tiniest droplet.

The next step to be considered is the application of N/10 KOH or .4% Na OH from a pipette to each point. To this is added the dried pollen. It is best to use a fine glass spatula for this purpose being careful to use a different one for each application. Greatest care must be exercised to avoid contamination since the pollen is so light and such a few grains can produce a spurious reaction. It is by no means an easy thing to avoid contamination in handling several specimens. The pollen containers are small and there are many opportunities for slips. One should avoid tests in close proximity to each other and we always try to check our results on another day, especially when doubtful reactions are found. When considerable work is being done we find it convenient to draw out capillary tubes and fill and seal a group of each of these with the KOH solutions of the various pollens in use. This arrangement greatly facilitates the testing and prevents some confusion of results. We do not attempt to keep these long. The vicinity of each test is labelled with a skin pencil.

REACTIONS AND DIAGNOSIS

The time of reaction varies from 5 to 30 minutes. When the maximum is reached the lesion rapidly subsides except in severe cases. In the latter the dermatitis set up lasts several days. In two or three of our cases the patient reported a recurrent itching for many days always coincident with exposure to pollen. We have been unable to explain this phenomenon and doubted the fact until repeated observations seemed to bear out its existence.

The intensity of the skin reaction does not always seem to be proportionate to the clinical symptoms of hay fever.

In our experience, those with asthmatic tendencies do not as a rule show intense reactions. Some experimenters state that the skin reaction in children is relatively less pronounced than in other individuals. Our ex-

perience does not substantiate this statement.

The testing is a very important part of the procedure. Many mistakes and much discouragement have resulted from incorrect diagnosis. The old classification of Fall and Spring type as applied to pollen extracts was a misleading one. Then tendency has been towards specificity in treatment. Although the grouping of pollens according to botanical families as suggested by Sheppegrrel⁽⁴⁾, Goodale⁽⁵⁾, and Walker⁽⁶⁾, has greatly facilitated the task of testing individuals, it should not be relied upon to give the best results in treatment. Much study is necessary in each case to determine the particular positive pollen. The study must include the patient as follows:

First—Exclusion of the possibility of a dietary cause.

Second—Consideration of occupational exposure.

Third—Determination of the season of the attack.

Fourth—Study of the habits of the patient.

It also must include local field study. The immunologist should study not only the average flowering date for the more common varieties of disturbers, but will be helped greatly by noting the actual progress of the season with different plants each year. He should also be familiar with the degree of prevalence of the common offending plants in his community or the community of his patients. Finally, the findings must then be correlated with the patient's symptoms as well as the cutaneous reactions found upon testing.

Goodale⁽³⁾ describes a cutaneous response to the application of the test solution as follows:

First—Sharply circumscribed white area surrounding the scratch for a distance of from 2 to 4 mm. or a slightly raised reddened area.

Second—More pronounced, extensive, more or less white in color and surrounded by reddening of various sizes together with considerable itching.

Third—Two or three centimeters of oedematous area surrounded by one or two centimeters of reddened area.

We have attempted to class the severity of reaction as follows:

Major reactions—those which produce a wheal of one centimeter or more.

Minor reactions—where the wheal was less than that size although considerable redness was produced.

Slight reactions—those which could not be classed as negative.

subcutaneous tissue of the sensitive individual, about six weeks prior to the onset of the disease, according to the experience of the patient. If the patient has had treatment in a prior year we do not always find it necessary to begin so early in the prophylactic treatment since the inoculations may

REACTIONS					POLLEN		YRS.	TREATMENT	
Case Sex Age	Major	Minor	Slight	Other Aller- gies		Pollen Ext. Used		Results	
A. W. M 32	Ragweed d	Ragweed g		Dermat- itis	6	Ragweed d		90% relief for the past 4 seasons, First 2 years treatment insufficient.	
H. B. M 35	Ragweed d Sunflwr	—	—	—	4	Ragweed d Sunflower		Treatment 3 years Relief complete for 4 years.	
W E B M 30	Ragweed d	—	—	—	1	Ragweed d		Complete relief by short seasonal treatment	
Z T F 26	Ragweed Sun- flower	—	—	Hives Egg	4	Ragweed d Sunflr		Very heavy treatment 1 season with complete relief for 4 years.	
E. L. F 17	Blue Gr Timothy	Sweet V Orchard Gr	Corn Golden- rod	Hives Fam His Asthma	3	Blue Gr 1 Yr Timothy 2 Yrs		Complete relief by 3-5 Inoculations each season	
F. G F 30	Daisy Corn	Ragweed	June Grass		3	Straw- berries		Seasonal treatment 3 years 70-100% relief	
E. C S M 45	Sage- brush	Daisy	Cheno- pod	Asthma- tic Straw- berries	2	Arteme- sia or Sage- brush		Immediate partial relief and complete relief after change of occupation	
C. F M 12	Rag- weed	Sun- flower		Hives	2	1st Yr Ragweed & Sun- flower 2d Yr Ragweed		Ragweed & Sunflower first year with complete relief Ragweed alone second with less than complete relief but irregular treatment	
E. L M 20	Sage- brush Rag- weed	Sun- flower	—	Hives	2	1st Yr Ragweed & Sun- flower Ragweed		80% relief 60-80% relief	
R. S M 21		Chenopod Sagebrush Ragweed Timothy Bluegrass		Affect- ed by horses	1	Ragweed Chenopod		Very little if any relief	
E. B. M 17	Ragweed	Chenopod	—	Asthma in fath- er Asthma	1	Ragweed		Seasonal treatment near end of season Amount of relief uncertain	
R. M M 30	Ragweed	—	—	Asthma- tic very severe		Ragweed		Very heavy treatment q 1-3 da with great relief.	

A. H. W.

TREATMENT

Our first consideration in the treatment is to have the patient free from pathology of the head, nose, and throat such as sinusitis, polyps, nasal obstructions, enlarged tonsils, etc. The specific protein having been selected, the treatment is begun by cautiously introducing the extract of the pollen into the

be pushed with greater vigor without danger in a known case. Individuals who have not received full relief may often have their degree of protection materially increased by a higher dosage.

“Slight colds” out of season and in season may be the result of a secondary or accessory sensitization. In our work we have termed

these as minor sensitivenesses. Anaphylactic shock has occurred in our work. Perhaps, fortunately for our patients, we ourselves suffered one of these experiences rather early in our own treatment. We are proud to say that we have not caused one in any of our patients. We are confident that the anaphylactic reaction in our own case was produced by introduction of the needle into a blood vessel. Utmost care should be exercised to prevent this unpleasant experience. One must not forget that he is dealing with a group of individuals who are very susceptible, usually not alone to the pollen being used, but other proteins as well. In our series of cases we find but two who failed to show a history of evidence of other protein sensitization such as urticaria or idiosyncrasy to some special food. We believe that by proper precaution shock can be prevented even during the season and with the large dose.

During the season we use a few minims of adrenalin chloride solution with all injections of pollen extracts in individuals who show tendencies to reaction. Several pollen extracts on the market are active. These are of varying strength and a change of products must be made with caution. After a patient has been treated one year and his tolerance more or less determined, it is not necessary, we believe, to begin the treatment so far in advance of the usual onset of the symptoms.

Few rules can be laid down about dosage. Each case is a law to itself. We find the best results are obtained where the prophylactic dose was begun 4 to 6 weeks before the season and carried on through the season. Marked relief has been given in some cases where we were not consulted until after the onset of symptoms. In such cases we have given a preliminary or test dosage followed the same day or the day after by a larger dose. We have fortunately never had a case of shock under this plan. During the season a dose every second day and sometimes every day has been found necessary to obtain relief. Our aim is to keep the patient on the threshold of reaction.

Where a patient has shown sensitiveness to more than one pollen we have secured good results by adding the second or minor pollen. This secondary pollen has been sunflower in three of our cases and we had good results by adding this to our treatment when the primary or major extract seemed insufficient.

We believe that the sunflower is a real fac-

tor in this region although Sheppregrell⁽⁷⁾ states that showy flowering plants are insect pollinated.

We base our opinion on a study of the sunflower pollen (a lantern slide of same will be shown herewith) which is not extraordinarily heavy, is not gummy, but is covered with spines giving it a bouyant property as well as adherence to mucous membranes. The plant is extremely prevalent and nicely located to catch the susceptible motorist. We have found numerous individuals with a major cutaneous reaction thereto. Its specific treatment has appeared to produce good results in our cases.

Pollen treatment is successful in the relief of hay fever symptoms as shown by our observation of cases over a period of four seasons. Cases denoting a marked cutaneous reaction to one or two pollens have been most successfully treated. Where numerous sensitivenesses were present or where the reaction was slight the treatment results were less satisfactory. Asthmatic cases have been relatively less satisfactory. All cases have not responded to our treatment but we believe this was our fault in the diagnosis or management of the case.

The extent of relief, the severity of the season, the constantly changing vitality of the individuals, the psychic element — all these are such variable factors that it is impossible to make a mathematical statement of the results gained.

Although some cases have been cured, most require treatment each year. It is a desensitization process for the relief of symptoms.

SUMMARY AND CONCLUSIONS

The great prevalence of hay fever should excite a greater interest in its treatment by the medical profession. Symptoms are due to a sensitiveness to one or more specific pollens which can be determined by cutaneous tests. Great care is necessary in the diagnosis and testing with specific proteins. It must be remembered that these cases are usually highly sensitive individuals and that extreme caution should be exercised to avoid anaphylactic shock. The dosage is very uncertain. Results are best where there is an active individual cutaneous reaction found. Most cases are only temporarily desensitized.

BIBLIOGRAPHY

1. Manning, E. B., J. A. M. A. LXIV 655, 1915.

2. Dunbar, W. P., *Zur Ursache und Specificien des Heufiebers*, Muenchen, 1903.
3. Caulfield, A. H. W., *Sensitization in Bronchial Asthma and Hay Fever*, J. A. M. A. LXXVI, 1071.
4. Scheppegegrell, Wm., *Laryngoscope* 31:549, July, '21.
5. Goodale, J. L., *Pollen Therapy in Hay Fever*. Vol. CLXXIII, No. 2, pp. 42-48.
6. Walker, I. C., *Clin. No. Am.* 4, 1673, May, '21.
7. Scheppegegrell, Wm., *The Goldenrod is Not Responsible for Hay Fever*, U. S. PUB. Health Repts. July 21, 1916.

ROENTGENOLOGICAL FINDINGS OF THE RIGHT UPPER QUADRANT OF THE ABDOMEN*

A. P. Overgaard, M. D., F. A. C. R., Omaha, Nebr.

The Roentgen ray examination of the right upper quadrant today is definite, practical and necessary in making gastro-intestinal diagnosis.

About fifteen years ago when the Roentgen ray was brought into use, it was accepted rather doubtfully and was employed only in very unusual and rare cases. Today, it is recognized as the one diagnostic assistant that cannot be dispensed with. The credit for this belongs to America and such men as Carman, Case, Lewis Gregory Cole, George, LeWald and a large number of other roentgenologists who have demonstrated beyond dispute the necessity for the Roentgen ray diagnosis.

A conservative attitude demands that under no circumstances should a final diagnosis be made on the Roentgen ray findings alone, but should be combined with the clinical findings to arrive at a definite entity. The same is true of the converse of this proposition. Under no circumstances should a final diagnosis be made on clinical findings alone.

The Roentgen diagnosis is based on pathology of the organ under observation. The well trained eye can detect slight defects and deformities on the fluoroscopic screen that mean nothing to the average physician. Therefore, in order to give you definite facts I am going to follow the classifications as laid down by Dr. Carman of the Mayo Clinic. This is based on years of intense work and careful study.

In order to obtain accurate results, both the fluoroscopic examination and a series of films should be made of each case. Only by combining careful observation under the screen with the study of definite shadows registered on the films can we be sure that a thorough check has been made.

But this method demands industry, exper-

ience, judgment and careful observation; attributes which cannot be acquired in a day and yet are invaluable to our diagnostic equipment when properly applied. With our routine, every normal stomach and duodenum must give a normal Roentgen picture and no normal picture will be obtained if the stomach and duodenum contain within their walls any organic lesion. This is of great practical benefit, for many of our patients come suffering from fear of cancer.

We shall touch upon the more common lesions found in the right upper quadrant today and not go into detail on all the lesser problems that confront us. Therefore, we will consider the following lesions:

Gastric ulcer

Duodenal ulcer

Cancer of the lower end of the stomach and duodenum

Gall stones and gall-bladder pathology

Roentgen signs of gastric ulcer are divided into two classes:

1. Primary and practically pathognomonic signs
 - (a) Niche
 - (b) Accessory pocket
 - (c) Organic hour-glass stomach
2. Secondary and corroborative, but absolutely diagnostic signs
 - (a) Spastic manifestations
 - (1) Incisura
 - (2) Spasmodic hour-glass stomach
 - (3) Diffuse gastrospasm
 - (b) Retention from the six-hour meal
 - (c) Gastric hypotonus
 - (d) Acute fish-hook form of stomach
 - (e) Abnormalities of peristalsis
 - (f) Localization of tenderness
 - (g) Lessened mobility of the stomach

The Niche: The niche shows a bud-like prominence on the peripheral outline of the stomach. Its size may vary from a mere fleck to a considerable protuberance.

Accessory Pocket: The accessory pocket occurs as a result of perforation of an ulcer and extension of the ulcerative process into adjoining structures producing a cavity.

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Organic Hour-Glass: Organic hour-glass stomach is an occasional sequence of penetrating or perforated gastric ulcers. The constricted portion is infiltrated or involved in adhesions.

Contributory Signs of Ulcer: To produce either a niche or an accessory pocket it is plainly necessary that the ulcer has eroded the gastric wall to a depth sufficient to make a demonstrable projection from the gastric lumen.

Spasmodic Manifestations — Incisura: Chief among the spasms excited by ulcer and perhaps the strongest contributory sign of this lesion, is the incisura. This is an indentation of the gastric wall opposite the ulcer. Its production is generally believed to be due to irritation of the ulcer, causing a spastic contraction of the circular muscle-fibers in its plane. An incisura may also occur in association with the scar of a healed ulcer. The vast majority are found on the greater curvature, and most commonly in the vertical portion of the stomach.

Spasmodic Hour-Glass: Any stomach which is indented by an incisura may be broadly considered an hour-glass, but unless the constriction is quite deep the term hour-glass is not usually applied.

Residue: A distinct residue in the stomach from the six-hour meal amounting to an eighth or more of the quantity taken, is a relatively common accompaniment of gastric ulcer.

Gastric-Hypotonus: An evident loss of tone, as shown by sagging and expansion of the lower gastric pole is a frequent accompaniment of ulcer.

Acute Fish-Hook Stomach: An acutely flexed, fish-hook form of stomach with displacement to the left and downward, may occur with or without an ulcer.

Abnormalities of Peristalsis: The variations of peristalsis met with in gastric ulcer include weak peristalsis, hyperperistalsis, especially of irregular type, absence of peristalsis from the ulcer-bearing area and anti-peristalsis. None of these is peculiar to ulcer, but all of them are more or less suggestive of gastric lesion.

Localization of Tenderness: A sharply localized pressure-tender point over a niche is of confirmatory value. To be of any value, a pressure-tender point must be narrowly circumscribed, as most persons have more or less tenderness in the epigastrium.

Lessened Mobility: A local fixation of the gastric wall often results from perforating ulcer with the production of adhesions.

Roentgen signs of duodenal ulcers:

- A. Direct signs
 - 1. Deformity of the duodenal contour
- B. Indirect signs
 - 1. Alteration of gastric tone
 - 2. Alteration of gastric peristalsis
 - 3. Alteration of gastric motility
 - 4. Gastrosplasm
 - 5. Tenderness localized to duodenum

Direct signs: Deformity was first developed by Lewis Gregory Cole of New York in his plan of "serial roentgenography". The deformities are divided into three classes: (1) Those due to organic distortion; (2) Those due to organic changes plus spasm; (3) Those which are produced by spasm only.

1. General distortion with sharply outlined projections and indentations, giving the bulb the semblance of a miniature pine tree or a clover leaf shape. This sort of bulb almost always means duodenal ulcer. The distortion is largely due to spasm, this element being persistent and unvarying.

2. Deformity of basal border: Instances are not infrequently encountered in which the base-line alone of the bulb is irregular. Most often the distortion is seen as a shaded filling-defect, and, though definitely recognizable, may be quite small.

3. The niche-type: The excavation of the ulcer is seen as a barium-filled recess projection from the bulbar chamber. It varies from a wheat grain to larger in size, and its barium content is often denser than that in the rest of the bulb. The niche may or may not be accompanied by an organic or spastic deformity elsewhere in the bulb.

4. The incisura-type of deformity: The incisura may be unilateral or bilateral (hour-glass). It is usually small but sharply outlined, evidently spastic.

5. In occasional instances the bulb is represented by a very small but compact mass of barium.

6. The accessory pocket of a perforated ulcer which has invaded tissues outside the duodenum, shows as a projection from the bulbular contour. It may be rounded or uneven in outline, and its contents may be arranged in layers of gas, fluid, and barium. Often it contains a residue from the six-hour meal.

7. A diverticulum also appears as a sac-

like addition to the bulb proximal to the site of the ulcer. As a consequence, the basal portion of the bulb is usually enlarged.

Value of indirect signs: The value of all these indirect signs depends considerably upon their frankness, their varying combination, and their concordance with the general aspects of the case. Hyperperistalsis associated with gastric retention and an enlarged stomach of normal outline is safely diagnostic. Carman states that about 11.5% of cases of gastric ulcer also have a duodenal ulcer.

Akerlund of Stockholm lays stress upon this fact that an absolutely negative finding at laparotomy by an external inspection and palpation of the duodenum proves practically nothing at all in respect to the existence or non-existence of an ulcer. On resection a pea-sized or even larger crater-shaped previously roentgen-diagnosed duodenal ulcer has escaped the notice of even the most experienced operators when making an external examination by laparotomy. This is a very important addition to our diagnosis as I have no doubt many of you have witnessed operations when duodenal ulcers have been overlooked because the surgeon depended on external signs to confirm the roentgen diagnosis.

There is a close relation between activities in the pyloric end of the stomach and the duodenum.

Cancer of the Stomach—Classifications:

1. Filling defects
2. Alteration of pyloric function
 - (a) Gaping of pylorus
 - (b) Obstruction of pylorus
3. Perversion of peristalsis
 - (a) Absence of peristalsis from involved areas
 - (b) Weak Peristalsis
 - (c) Antiperistalsis
 - (d) Exaggerated peristalsis
 - (e) Irregular peristalsis
4. Altered motility
 - (a) Rapid and early emptying (non-obstructive cases)
 - (b) Delayed emptying (obstructive cases)
5. Lessened flexibility
6. Lessened mobility
7. Alteration of size (capacity)
 - (a) Shrinking
 - (b) Dilatation
8. Persistent local spasm
9. Displacement

Filling Defects: A filling-defect is a basic roentgenologic sign of cancer and practically indispensable to a positive diagnosis. It is

occasioned by the projection of the tumor into the barium filled lumen of the stomach, thus producing irregularity of contour. In aspect, the filling defects vary somewhat according to the character and seat of the neoplasm. A true filling defect is permanent and appears to correspond to a palpable mass. The pyloric portion of the stomach is a common seat of cancer.

Alteration of Pyloric Function: The gaping pylorus of cancer is characterized by a free and continuous exit of the meal from the stomach into the intestine. Pyloric obstruction, as evidenced by a six-hour residue in the stomach, occurs in about 60 per cent of gastric cancers. The amount of residue varies.

Peristalsis: Absence of peristalsis from a cancerous area of the gastric wall due to local loss of muscular contractility is a valuable sign. Weak peristalsis, the waves being both shallow and infrequent, is fairly common in cancer. Frequently the stomach seems to be perfectly inert. Antiperistalsis is occasionally observed in cancer with pyloric obstruction. Exaggerated peristalsis, as a sequence of cancer with pyloric obstruction, is more rare than might reasonably be supposed; most marked on the greater curvature.

Altered Motility: Emptying of the cancerous stomach may be either retarded or accelerated, according to the presence or absence of pyloric obstruction.

Lessened Mobility: Exceptionally, when it involves adjacent structures, a cancer produces more or less fixation of the stomach, either to the abdominal wall, or to the liver, pancreas, or other viscera.

Lessened Flexibility: Diminished flexibility of the cancerous gastric wall is a practicable and useful sign, especially of scirrhus cancer.

Persistent Local Spasm: Cancer on the lesser curvature or on the posterior wall may give rise to a spastic indrawing of the greater curvature. Often it is quite broad and has been spoken of as a "broad incisura" of cancer as compared to the relatively narrow incisura of ulcer.

Alteration of Size and Capacity: A common feature of cancer of the stomach is marked diminution of the capacity and apparent size.

Displacement: The predilection of cancer for the pyloric end of stomach often with more or less complete obliteration of the dis-

tal portion of its lumen, results frequently in an apparent displacement of the stomach to the left, since its proximal portion only is visualized.

Gall-Bladder:

1. Direct Signs
 - (a) Gall stones
 - (b) Gall-bladder pathology
2. Indirect signs
 - (a) Pressure deformities
 - (b) Adhesions
 - (c) Spasm

Direct Signs: The most common error is to mistake the round edge of the lower pole of the kidney for gall-bladder. The average gall-bladder, however, is much smaller than the average kidney. Direct evidence of stone is of great value in determining whether or not there is a concomitant lesion, whether or not surgery is indicated. Gall stones can be detected with the ordinary film in a large per cent of cases if one is familiar with their roentgen appearance. Gall stones are divided into two groups:

1. Stones which contain considerable calcium.
2. Cholesterine stones which contain no calcium or only a trace.

Gall stones containing a large portion of calcium can be shown without difficulty. These are rather infrequent. The great majority of stone content consists of a cholesterine nucleus, with a calcareous coating or vice versa. Little rings, frequently no larger than a good sized pin head, are often found in groups, sometimes isolated, in varying shapes of round, oval or even quite irregular form.

Definite shadow of gall-bladder has been considered as being produced by a thickening of the wall of the organ. This has lately been proven not to be entirely the fact as the bile seems to play a considerable part in its production. A differential diagnosis must be made from the following:

1. Single stones in the kidney, or multiple stones associated with hydronephrosis, and calcification in a tuberculous kidney
2. Calcification within the adrenal gland
3. Calcified rib cartilage
4. Articulated transverse processes of the lumbar vertebrae
5. Calcification in the tip of a transverse process, or an apparent shadow due to the obscuring of part of the process by the psoas muscle

6. Calcified mesenteric glands
7. Calcified areas within the liver
8. Calcification in the lung or pleura
9. A calcified psoas abscess
10. Phleboliths in the skin or abdomen
11. Food or gas in the bowel
12. Barium in the bowel or appendix
13. Growths on the skin
14. Artefacts in the film or screen

Indirect Signs—Pressure Deformities: Unusual pressure on some of the adjacent organs may be produced by the gall-bladder. The duodenum is the most frequently affected. A typical curve of the gall-bladder may be seen on the external surface of the duodenum, occasionally on its superior surface. This pressure from above frequently produces a characteristic flattening of the cap almost pathognomonic of gall-bladder disease. The antrum of the stomach, particularly with gall-bladders which are enlarged, may also show characteristic pressure deformities.

2. **Adhesions:** Fixation of adjacent organs by adhesions, and deformities in outline of adjacent organs from adhesions. In studying the group of fixation due to adhesions, the fluoroscope as well as the film is of particular advantage. The angulations in the course of the second portion of the duodenum are quite as characteristic as the indentations in the bulb. The angle of the right oblique position cannot be foretold in any case. A few degrees either way from it will militate seriously against its usefulness. The first portion of the duodenum may show an irregular outline due to deforming adhesions. The duodenum may be constricted by a single band, or present a serrated edge as though the entire surface were glued or adherent to the gall-bladder. The stomach may show various types of adhesion deformities, all of which differ from the deformities due to gastric lesions.

Spasm: Here the fluoroscope is of great value. It is frequently stated by clinicians that a diseased gall-bladder is probably the most frequent cause of reflex gastric symptoms. It is, therefore, reasonable to expect some type of gastric spasm more or less characteristic of gall-bladder disease. This type of spasm produces extensive tonic contractions of the pyloric half of the stomach which is persistent and different from the usual gastric spasm. The indirect evidence consists in very slight variations from the

normal and unless the roentgenologist through experience becomes familiar with these changes, they will often be entirely overlooked. Direct evidence, when present, is, of course, the most dependable for making positive x-ray diagnosis. Unfortunately, however, this direct evidence seems to be found only in a minority of gall-bladder cases.

Carman's statistics show a positive diagnosis in 52.9%; negative diagnosis in 44.6%. All gall-bladders removed at operation were examined by the pathologist and found to be diseased.

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BIBLIOGRAPHY

New Light on Gastric Peristalsis, W. C. Alvarez, M. D., American Journal Roentgenology, January, 1923.

Secondary Signs of Gall-Bladder Pathology, R. D. Leonard, M. D., American Journal Roentgenology, July, 1923.

Importance of Indirect Roentgen Findings in Chronic Infection of the Biliary Ducts and Gall-Bladder, M. P. Burnham, M. D., American Journal Roentgenology, February, 1923.

Roentgenologic Diagnosis of Cholecystic Disease, R. D. Carman, M. D., W. C. MacCarty, M. D., J. D. Camp, M. D., Radiology, February, 1924.

Roentgen Diagnosis of Ulcus Duodeni with Respect to the Local Direct Roentgen Symptoms, Ake Akerlund, M. D., Acta Radiologica No. 5, 1923.

Roentgen Diagnosis of Diseases of the Alimentary Canal, R. D. Carman, M. D.

Klinische Röntgendiagnostik, Prof. Dr. Herbert Assman.

Roentgen-Diagnosis of Surgical Lesions of the Gastro-Intestinal Tract, George and Leonard.

The Pathological Gall-Bladder, A. W. George, M. D., Ralph D. Leonard, M. D.

DISCUSSION

Dr. C. H. Ballard, Omaha: Dr. Overgaard has presented the usual run of gastric ulcers, duodenal ulcers and carcinomas. One thing that impressed me was the advanced stage of disease shown, especially in carcinomas; and I think we all find this true in our own cases. Of all the slides exhibited of carcinoma involving the stomach, I should say 90 per cent were inoperable; therefore, it is too late to prolong the patient's life by surgical or therapeutic measures.

I should like to make a plea for a more routine Roentgen examination of the stomach in order to catch some of these cases at an earlier date when operation might benefit the patient. When the greater part of the stomach is involved, we generally find the abdominal glands also involved and the patient hopeless in regard to operative measures. If we could get these cases early with only a small portion of the stomach involved, operation then is often of great benefit, and many patients will live for years. Therefore, x-ray examination of the gastro-intestinal tract in patients complaining of so called "gastritis" or "indigestion" is important from an economic standpoint.

Dr. Carl Kail, Lincoln: In the acute fish-hook type

of stomach which Dr. Overgaard showed, very often those defects are caused by pressure from the spine. Sometimes it is confusing because on the whole series of plates you will find defect from pressure of the spine. If you will build your patient up on sand bags or take the weight off the stomach, it will come out normally, when otherwise you might make a diagnosis of an ulcer of the duodenum.

Dr. R. W. Fouts, Omaha: In Roentgen examination of the gastro-intestinal tract, I think we are inclined to place too much stress on what we see on the films, rather than what we see in the fluoroscopic room. Personally, I believe 95 per cent of my diagnoses were made in the fluoroscopic room.

I do not find it necessary to lay the patients on a sand bag if I have made a proper fluoroscopic examination. Sometimes to make the record I may have to twist them around to get in some particular position in order to record what has been discovered fluoroscopically, but not by way of making the diagnosis.

Relative to the picture Dr. Ross thought showed deformity in the cardia, I find in a good many of my cases, particularly the thin individuals or the ones where the chest is rather narrow, that deformity comes from pressure of costal cartilage.

With reference to duodenal ulcer, I feel the x-ray is more corroborative in a way, particularly in these cases. We can not say in a great many cases it is an ulcer. We can only say it is a filling defect. Many are the result of adhesions. We will not diagnose all ulcers if we depend upon the x-ray alone. It is a valuable aid, but it is only one thing. I think we should not depend solely upon the x-ray. It is worth more than any one thing we have, yet we must not forget the fact that we are physicians and have more than one means of making a diagnosis.

Personally, I do not care for a history of the case until after I have my findings and then try to fit them with the history and justify the conclusion at which I may arrive. I feel the fluoroscopic examination is worth nine times as much as are the plates.

Dr. Overgaard: I took up none of your time with technique or anything of that kind.

As to the question of Dr. Ross about the pressure on the first slide, I intended to say it was probably pressure of the spleen.

Dr. W. L. Ross: The spleen does not very often do that, in my experience. More often we find it is gas.

Dr. Overgaard, (continuing): As to Dr. Ballard's question, about 90 per cent of the cases of cancer of the stomach are inoperable. I do not think there is any question as to that. Dr. Gilligan said we must catch the patient before we can make the diagnosis. The great trouble is the patients do not have a whole lot of symptoms until they are too far advanced. Then the x-ray man is unable to do anything to aid.

As far as our findings with the plates, these are simply made to illustrate different points. Our main diagnosis must be made with the screen. Most of the men in this country do their fluoroscopic work before they make the plates, and it is more reliable because you can see your fundus of the stomach and study your peristalsis and move your patient in any position; where a plate is only one position at a certain interval of a second. Even if you make a

series of eighty to a hundred plates and have them set up one after the other, you have not as good a check-up as with a good fluoroscope where you train your eye and get your room dark so you can actually see the stomach function.

There is a point on making plates of duodenal ulcers. I find if they are made an hour after a meal you will get better films typifying deformity than if made immediately after. That is simply a kink that aids technique.

KYPHOSIS DUE TO CONGENITAL ANOMALY OF SPINE

J. W. Duncan, M. D., Omaha, Neb.

Congenital defects in the lower lumbar and sacral vertebrae are quite common and in the majority of cases do not give rise to clinical symptoms. They consist chiefly in a lack of fusion of the laminae or some abnormality of the transverse processes.

Sutherland, in the *Journal of Radiology*, September, 1922, has reported a number of developmental anomalies of the spine observed in the Mayo Clinic and has reviewed the literature very carefully. The majority of these anomalies were discovered on routine examination for other complaints. In the list were the following:

Nonfused or Absent Laminae:
Laminae:

Cervical (1), Cervical and Thoracic (1), Thoracic (3), Lumbar (4), Lumbar and Sac-

mentary Left One-Half of Sacrum (1), Sacralization and Bifurcation Transverse Processes Fifth Lumbar (9).



ral (9), Sacral (5), Lateral Rotation Lumbar Region (1).

Bony Spur Lumbo Sacral Region (1), Rudi-



Wedge Shaped Bodies (apex laterally, producing scoliosis). Cervical (1), Thoracic (2), Lumbar (1).

It will be noted that out of thirty-nine congenital anomalies of the spine only four cases involved the bodies of the vertebrae. Kleinberg (*J. A. M. A.* March 4th, 1916), also reports a case of congenital anterior curvature of the spine. The x-ray in this case does not, however, show any bony deformity. None of the cases reported is of the type described below nor does the literature available record any case producing kyphosis.

G. B., a male cretin, aged 3, a patient of Dr. Floyd Clarke, was examined November 6th, 1923, for a deformity of the spine. He was a full term child. The delivery was normal. He weighed ten pounds at birth. A sister four months old is also a cretin. The father relates that a swelling in the back was apparent to the mother and to the physician attending within a few days after the birth. This swelling has gradually grown more marked but it seems

to cause no pain nor even any discomfort. The child



is much retarded mentally and has little or no control of urine and bowels.

Examination shows a cretin with a very protuberant abdomen and a marked kyphos beginning in

the lower dorsal region, most marked over the first lumbar and extending down to the sacrum. There is no acute angulation, the swelling seems almost hemispherical and extends well out laterally onto the ribs. It is not tender, the skin is not adherent and there seems to be no fixation of the superficial structures. There is no muscular spasm and the boy lies, sits, stands or walks without discomfort.

The kyphosis can be appreciably diminished by placing the hands in the axillae and lifting upward thus taking the weight off the spinal column. There appears to be free lateral mobility and rotation of the spine. When the child lies on the abdomen the kyphosis is much diminished in size and on pressure it disappears almost entirely but immediately recurs without pain when the child assumes the upright position. The laminae are firmly fused. There is no scoliosis. The child has an umbilical and also double inguinal herniae. Examination does not reveal any other congenital anatomic abnormality. The blood Wassermann reaction is negative.

The report on the x-ray examination made by Doctors Tyler and Blackman is herewith quoted: "There is a congenital deformity of the body of the first and to a lesser extent the body of the second lumbar vertebra in which the body is wedge shaped the apex anterior. There is a marked kyphos in the upper lumbar region with convexity backward. The transverse diameter of the heart is increased. Congenital deformity."

Some type of operation for fusion of the vertebrae such as the Hibbs operation might offer some hope of permanently overcoming this deformity. Until the child is older the parents were advised to apply a removable brace with axillary supports.

PELVIC PAIN IN WOMEN*

Palmer Findley, M. D., F. A. C. S., Omaha, Nebr.

In the few minutes allotted me I despair of doing justice to the subject of pelvic pains in women. If pain is what Haggard says it is, "The language of disease" then my task is indeed great, for disease abounds in the pelvis of women perhaps to a greater degree than is found in any other portion of the body of like dimensions.

Permit me to briefly call to your attention certain familiar types of pelvic pain in women. First of all is the type in which there is no demonstrable pelvic lesion. For want of a better term we call this type of woman a neurotic. These cases belong not to the gynecologist but to the psychoneurologist. The usual discomfort of the normal menstrual cycle is exaggerated into pain and often of great severity. Such individuals have developed a pelvic squint and it is the business of the physician who, after satisfying himself by a careful pelvic examination,

if need be by the aid of a general anesthetic, that no lesion exists within the pelvis to account for pain, to treat the patient along general lines and so far as possible divorce her thoughts from her pelvic organs. The problem is one of personality rather than one of organic abnormality.

Another familiar type is the anemic or chlorotic young woman. Here again the gynecologist is at the end of his rope when a diagnosis is made and the internist steps in. Too often the pain is ascribed to an ante flexion of the uterus. In such young women the uterus is normally ante flexed and only when the cervix and body of the uterus are paralyzed are we justified in ascribing the pain to an angulation of the uterus.

We hear much of the infantile uterus as a cause of painful menstruation and it is true that an underdeveloped uterus or cervix is commonly associated with menstrual pain. Unfortunately, however, such cases are usually of the neurotic type and the uterus is

*Read before the Omaha-Douglas County Medical Society, March 11, 1924.

not underdeveloped as evidenced by the fact that in many of these so called infantile types the menstrual flow is normal in amount and an infantile uterus never menstruates the normal amount.

The most common abnormality of the female pelvis is decensus uteri. Sacral backache and a dragging sensation in the pelvis is experienced in the early stages of the descending uterus which may altogether, or in part, disappear as the uterus completes its descent with the accompanying relaxation of the utero-sacral ligaments and other supports. Pain is greatest in the early stages of the descent.

Uncomplicated retroversion of the uterus is not a clinical entity, does not cause symptoms and calls for no consideration. If pain and other symptoms are present these clinical phenomena are to be ascribed to associated pelvic lesions and not to retroversion of an otherwise normal uterus.

Reference should be made to pain in cancer of the uterus to emphasize the fact that so long as the cancer is confined to the uterus there is no pain, which is to say that the case has passed the operable stage when pain appears. Erosions and lacerations of the cervix per se do not cause pain. Here again, if pain exists the distress is chargeable to associated lesions.

Fibroids of the uterus and ovarian tumors cause pain from pressure; the degree of pain

being dependent upon the size and location of the growth.

What can we say of reflex pains incited from pelvic lesions? We can say precisely nothing. They simply do not happen. I do not here refer to pains referred to adjacent structures such as pain radiating down the thigh from an inflammatory mass in the pelvis but rather to pain in remote parts of the body.

We speak of uterine pain, of ovarian pain, and of tubal pain. The lesions which incite these pains may exist singly or in combination. We must bear in mind that in the menstrual cycle there is an active hyperaemia of all pelvic structures; more marked in the uterus but present in varying degrees in all tissues of the pelvis. This calls for altered functions and increased sensations of all organs and tissues involved and if pain is engendered we find the uterus, tubes and ovaries each contributing its quota to the pain. It is, therefore, most confusing to attempt to differentiate uterine pain from ovarian or tubal pain. The more so because menstruation is not a process that involves the pelvic organs alone but also affects the central and peripheral nervous system and the various organs of the body dependent upon them for their nerve supply. Dysmenorrhoea is a mental as well as a physical disturbance.

The conclusion is forced upon us that pelvic pain is a most unreliable guide in the diagnosis of diseases of women. Someone has said: "Pain is the greatest liar of them all."

56TH ANNUAL CONVENTION OF THE NEBRASKA STATE MEDICAL ASSOCIATION. OMAHA, MAY 13-15, 1924.

OPENING EXERCISES

PRESIDENT NIELSEN: In calling to order the fifty-sixth annual convention of the Nebraska State Medical Association, it is well to consider that inasmuch as our organization is not for personal gain or profit, but that we are organized purely for the intellectual and moral advancement of our commonwealth, it would be inexpedient to open the session with other than the blessings of Deity.

INVOCATION

Rev. Lloyd B. Holsapple, Omaha, Nebraska
Almighty God, Author of Life, Fountain of Wisdom and Knowledge, we ask Thy blessing upon the meetings of this convention now assembled.

Endow with Thy continual help the labors of those who minister to the bodily ills of those in sickness and suffering.

Bless every earnest effort to relieve and prevent human pain.

Reward every honest inquiry and research with a deeper and truer knowledge of Thy law.

Imbue those who minister with a spirit of self-sacrifice and self-effacement.

Crown their labors with success according to Thy will. In particular, we ask the meetings of this convention may be of benefit to those who participate in them; and finally we pray Thee to unite us all in the effort that this, our land, so richly blessed by Thee, we endow with honest industry, with sound learning and good morals, to the end all things may be so ordered that peace and happiness, truth and justice, religion and right morals may be established among us both now and for all generations to come.

We ask it in Thy name. Amen.

ADDRESS OF WELCOME

A. S. Pinto, M. D., Health Commissioner, Omaha,
Nebraska

I have been called on to fill a good many differ-

ent places, but this is the first time I have been called on to fill the position of Mayor of the city. His office telephoned me the Mayor would be unable to attend, and suggested I take his place. I suggested somebody else, but they did not agree. Had this been a meeting of financiers, I think Mr. Butler would have been called on; or of police, I think they would have sent Mr. Dunn; or if a fire convention, probably Mr. Hopkins; but inasmuch as it is a convention of doctors, I presume they thought I was the man to talk.

When I was in Cuba I was isolated with smallpox and scarlet fever. I was doctor and nurse most of the time. When the patients died, I was chaplain, and when they took them to the cemetery, I was undertaker. I thought when Reverend Holsapple was praying, I wished I was the chaplain.

For the sixth time Mr. Dahlman has been elected Mayor of this city. He was sent on exile six years ago, but has returned from exile and has been elected with as big a majority as ever. He is proud of the city and its citizens. I am heartily sorry this afternoon he is not here to deliver one of his flowery speeches about the wonders of the broad plains and the agricultural district.

In welcoming to this city the physicians of the state, we feel that we honor ourselves in honoring you. If the medical profession — and it is an honorable profession — your profession and my profession — had accomplished nothing else but the discovery of vaccination, that would be sufficient reason for its existence. If it had done nothing else but discover the diphtheria antitoxin, it would have a right to claim it had served humanity.

The medical profession made possible the building of the Panama Canal. If it had not been for the discoveries made concerning yellow fever, the Panama Canal could never have been built. As fast as the French took over the Jamaican negroes to work on the Canal, they took a shipload of dead back. "Yellow Jack" was master of the situation. If you have never been where yellow fever was rampant, you have no idea of the terror stricken to the hearts of the natives when they have an outbreak. We have had a serious outbreak in Philadelphia and several in New Orleans.

If the medical profession had accomplished but one of these things I have mentioned, it would have a right to its existence.

There are a lot of problems to be solved, and I am glad to see this convention get together so that the members may exchange ideas. In our work in keeping down epidemics we have plenty to do, and it is not all a bed of roses. We hope and believe the day is coming with this terrible scourge of Cancer that something will be accomplished, and we won't need to bury so many people suffering from this disease.

I wish to extend to you the greetings of the Mayor and assure you we are glad to have you here. If there is anything you need, in the Mayor's absence, just let me know and I will lay it before the Powers That Be.

I thank you.

RESPONSE TO ADDRESS OF WELCOME

Lucien Stark, M. D., Hartington, Nebraska

Mr. Chairman, Gentlemen and Ladies, and Health Commissioner of the City: It is rather a difficult thing for me to acknowledge an address of welcome

from the city of Omaha. I remember the first welcome I got here was a great many years ago. I went to school here; played foot ball here; come here a great deal, and when I come to Omaha, it is a great deal like coming home. I know most of the folks I run onto and they are ordinary people like myself and we are glad to see them.

The first welcome was made by hotel runners, hack drivers and other relics of the past we do not remember any more. They are in the ever fading memories of time that once existed.

In thinking it over, it is a wonderful thing—the progress we have observed in the city of Omaha. It is a wonderful thing to stop and think how much the medical profession has done toward the progression that has been made.

When large bodies of men are brought together—we had an example in the army—we had disease and suffering develop and the Angel of Death got his toll every day. As Dr. Pinto so aptly expressed it, the Panama Canal would never have been built but for William C. Gorgas. The tropics would be a wilderness but for the work of Walter Reed and Lazear. Omaha would be a plague spot were it not for the work of such men as Dr. Pinto.

Those are all things which should give us great pride in our profession. We must have a pride in it. We must see to it the incoming generation is taught the glories of medicine and its accomplishments before they have faded from the minds of men. Pick up a history such as is taught in the ordinary school at the present time, and you find in it numberless pages devoted to the exploits of the Kaiser and of Napoleon — the two most murderous morons who ever lived — and the number of lives they were responsible for snuffing out. Go further and you find William C. Gorgas was the Surgeon-General of the United States army at the outbreak of the war. He undoubtedly is responsible for the saving and preserving of more lives than the Kaiser and Napoleon were responsible for destroying; yet he receives the briefest comment, while they give pages to the other two. We will see Lazear and Reed have the same attention paid to them as Attila, the Hun.

We must take pride in the accomplishments of our profession in our most metropolitan city. It is a wonderful thing we have Omaha. We have here our specialists so necessary in modern medicine. We have our hospital equipment in which many of the things could not be done outside of an institution of that kind are done.

We are delighted we are able to be in Omaha. We are glad we have an Omaha to come to. Her welcome has been spontaneous, kindly, and really meant. The Omaha people have done well to provide us with a place where we can have this intermingling and interchange of ideas. We are glad we are able to come here and exchange ideas. It is all for the benefit of humankind, anyway. It helps us all materially.

The Omaha people have shown their good judgment and intelligence by providing us with a place of this kind and welcoming us here; and finally one week ago today I think they showed intelligence and good judgment by re-electing Jim Dahlman as Mayor.

I wish to thank the Health Commissioner repre-

senting the Mayor for his cordial welcome to this Association.

I thank you.

DR. J. M. BANISTER, Omaha: I did not have the slightest idea of imposing myself upon you when I came in here, but I heard a reference made to Cuba and to the work of the Reed Army Board, and the discovery which has immortalized American medicine. I heard our representative of the Mayor touching upon that lightly and saying the building of the Panama Canal depended upon the work done there.

Modesty forbade him to give any inkling of his part in that great work. Knowing it as I do, I feel it incumbent upon me to tell you what he did. In order that that great discovery should be proven, volunteers were called for. You know Dr. Lazcar died as a result of the bite of a mosquito. Dr. Carroll's death was due to the same thing. Volunteers came forth, and Dr. Pinto was one. I do not know anything more brave — more heroic — than that. He offered himself to be bitten by infected mosquitoes for the benefit of humanity. If it were not for the fact the Doctor was bitten by a ten-day mosquito instead of a twelve-day, we would not have had the pleasure of hearing his interesting address this afternoon.

HOUSE OF DELEGATES

The first meeting of the House of Delegates was held in the Fontenelle Hotel, at 1:00 P. M., on Tuesday, May 13th, and was called to order by President Morris Nielsen.

It was moved and seconded that, inasmuch as the proceedings of the 1923 session had been printed in the Journal, that the reading thereof be dispensed with and that they be adopted as published. Motion prevailed.

Roll call by secretary showed 52 members present.

Dr. J. M. Banister, of Omaha, was nominated for president pro tem. It was moved and seconded that the nominations be closed and Dr. Banister receive the unanimous vote of the house as president pro tem. Motion carried.

Dr. Overgaard reported that the proceedings of the Board of Councilors' meeting had been published. It was moved, seconded and carried that the reading thereof be dispensed with.

The following reports were then presented and referred to the Council for action:

The Committee on Public Policy and Legislation stated through their chairman, Dr. Bailey, that they had no report to be made at this time.

The report of the Committee on Journal and Publication was read by the Chairman, Dr. Long.

Dr. Bailey moved that a rising vote of thanks be tendered Miss Erixon for her services. Motion seconded and carried.

The report of the Committee on Medico-Legal Defense was given by the chairman, Dr. von Mansfelde who presented a resolution that that part of Chapter X, Section 12, pertaining to reports made by county societies, be stricken from the By-Laws.

The report of the Campaign Committee was read by Dr. Hohlen.

The report of the Council on Medical Education was read by the chairman, Dr. J. S. Welch.

A detailed report of the secretaries' meeting in Chicago was given by Dr. Adams.

The report of the Committee on Care and Pre-

vention of Contagious Disease was given by Dr. Pinto.

The Librarian's report was read by the Secretary. Dr. J. S. Welch, delegate to Council on Medical Education of the A. M. A. gave a comprehensive report of their last meeting in Chicago.

The report of the Committee on Memorials was presented by Dr. Overgaard, the House standing during its reading. He moved that a page be set aside in the Journal for the publication of the resolution. Motion carried.

Communications from Dr. I. N. Pickett, of Odell, and Dr. Z. T. Daniel of Rushville were read and referred to the Council for action.

A communication relative to the Gorgas Memorial was read by the secretary. It was moved by Dr. Banister that the moral approval of the Association be given this movement. Motion seconded and carried.

The following resolution was offered by Dr. C. G. Baird: "Be It Resolved, That we welcome as co-workers in the healing art all those who are worthy and well qualified and are actuated by the motive of service to mankind, and as a safeguard to such in the pursuit to their calling as well as the adequate protection of the public, we urge the enactment, by the next session of the state legislature, of a uniform practice act, which shall establish a minimum education requirement for all practitioners of healing regardless of the system of treatment employed".

Dr. Hohlen moved that this resolution be referred to the Committee on Public Policy and Legislation. Motion seconded and carried.

The following members were elected to serve on the Committee on Nominations:

1st District.....	Max Emmert
2nd District.....	K. S. J. Hohlen
3rd District.....	C. L. Hustead
4th District.....	Frank Jensen
5th District.....	J. S. Devries
6th District.....	S. O. Harris
7th District.....	W. L. Welch
8th District.....	L. A. Carter
9th District.....	F. A. Burnham
10th District.....	F. A. Wells
11th District.....	C. F. Heider
12th District.....	H. A. Consey

The meeting then adjourned until 1:00 P. M. Tuesday.

SECOND SESSION OF THE HOUSE OF DELEGATES

The second session of the House of Delegates met in the Logan Inn at 1:00 P. M., May 14th, President Nielsen presiding.

Roll call showed 39 members present.

The minutes of the previous session were read by Secretary Adams. Upon motion they stood approved.

The report of the Board of Councilors' meeting was read by Dr. Overgaard, who moved that the report be adopted as a whole with the exception of the changes to be made in the By-Laws. Motion seconded and carried.

Dr. Overgaard read a resolution from Dr. Daisy Hanson which requested that a committee of five be appointed to promote public health education in the state. It was moved by Dr. Hohlen that this resolution be accepted and referred to the Board of Councilors for action.

The secretary read a communication from W. C. Woodward of the A. M. A., who requested that delegates be appointed to attend a legislative conference of the state medical associations in Chicago on June 11th. This was deferred to the Council.

A letter was read from Dr. Griggs requesting that Dr. F. W. Plehn be elected councilor in the 12th district.

After several announcements, the meeting adjourned.

THIRD SESSION

The third session of the House of Delegates was called to order by President Nielsen at 8:00 A. M. on Thursday, May 15. Roll call showed 40 members present.

The minutes of the previous session were read by the secretary and upon motion they were duly approved.

The report of the Committee on Nominations was called for and read by the secretary of the committee, Dr. Hohlen. He reported as follows:

"Your Nominating Committee herewith submits the results of its deliberations. We wish to state that we carefully considered all the suggestions as to officers from the standpoint of the best interest of this Association. The Nominating Committee recommends to this body that in order to make the work of the Nominating Committee less embarrassing, that it be advisable to strike out from Chapter V, Section 2 of the By-laws, the words 'No two candidates for president-elect shall be nominated from the same county.'

The following is the slate after due deliberation: President-elect—Palmer Findley, Omaha; W. J. Davies, Fremont; J. V. Beghtol, Hastings.

Vice-presidents—F. S. Owen, Omaha; R. D. Bryson, Callaway.

Secretary-Treasurer—R. B. Adams, Lincoln.

Librarian—W. P. Wherry, Omaha.

Delegate to the A. M. A.—R. W. Fouts, Omaha; Alternate—E. L. Bridges, Omaha.

Delegate to the Council on Medical Education of the A. M. A.—J. S. Welch, Lincoln.

Member of the Journal Committee—F. A. Long, Madison.

Member of the Medico-Legal Defense Com.—A. S. v Mansfelde, Ashland.

Councilors—1st District, A. P. Overgaard; 2nd District, H. J. Lehnhoff; 3rd District, C. P. Fordyce; 4th District, A. E. Cook. Unexpired Terms—5th District, S. A. Preston; 12th District, F. W. Plehn.

It was moved that the report of the Nominating Committee be received and the committee discharged. Motion seconded and carried.

There being no nominations from the floor, the House was ordered to proceed to election and Drs. Rowe, Covey and Banister were appointed tellers.

Election of president-elect by secret ballot, resulted as follows: Dr. Palmer Findley—32; Dr. W. J. Davies—5; Dr. F. S. Owens—3. Dr. Palmer Findley was declared elected.

It was moved, seconded and carried that the rules be suspended and the secretary be instructed to cast the unanimous vote of the House electing the following:

Vice Presidents: F. S. Owen, Omaha; and R. D. Bryson, Callaway. Secretary-Treasurer: R. B. Adams, Lincoln. Librarian: W. P. Wherry, Omaha. Delegate to the A. M. A.: R. W. Fouts, Omaha; Al-

ternate, E. L. Bridges, Omaha. Delegate to the Council on Medical Education of the A. M. A.: J. S. Welch, Lincoln. Member of the Journal Committee: F. A. Long, Madison. Member of the Medico-Legal Defense Com.: A. S. von Mansfelde. Councilors: A. P. Overgaard, H. J. Lehnhoff, C. P. Fordyce, A. E. Cook, S. A. Preston, F. W. Plehn.

The votes were cast as ordered.

A verbal report of the work of the Public Activities Committee was given by the chairman, Dr. C. A. Roeder. It was moved that the House endorse the action of this committee and that the president-elect be requested to continue the personnel.

It was moved by Dr. Overgaard that the last part of Section 12 of Chapter X, beginning with "Whereupon the Committee on Medico-Legal Defense, etc." be stricken from the By-laws, as it has been found impracticable and unnecessary. Also that Chapter VIII, Section 9 be made to read: "The Committee on Public Activities shall consist of five members. Their duties shall be to cooperate in creating and maintaining a working organization with other prominent public welfare organizations of the state; to direct, manage, supervise and control all public activities as they may outline. This Committee shall serve for a term of five years, providing that in the original organization of the committee, one member shall be appointed for a term of one year, one for two years, one for three years, one for four years, and one for five years. Motion seconded and carried.

Dr. Stark then prepared an amendment to the By-laws, to be acted upon at the first session of the next meeting. He moved that Sections 2 and 3 of Chapter V be repealed and stricken from the By-laws. Motion seconded by Dr. Emmert and carried.

Dr. Palmer Findley was then introduced to the House as the new president-elect.

The report of the second session of the Board of Councilors was read by Dr. Overgaard who moved its adoption. Motion seconded and carried.

The report of the committee which had been appointed by Dr. Bailey to review the president's address, was given by Dr. M. S. Moore as follows: "Your committee appointed for the purpose of reviewing the President's address esteem it a privilege to be asked to report on that able and masterly production of our executive. We desire to commend him for the rare originality and thought expressed. Because of the general information contained, and because of the many points of incalculable value which might serve to strengthen and improve the relationship existing between the medical fraternity and those whom we serve, we recommend that the address be published in the lay press, and further recommend that the original be preserved in the archives of the Association.

Respectfully submitted,

M. S. Moore,
A. R. Mitchell,
B. B. Davis."

Dr. Bailey moved that this report be adopted. Motion seconded and carried.

It was moved by Dr. Bailey that the House recommend that the Public Activities Committee arrange to send someone to the meetings of the county societies to represent the State Association with the

scale purpose of furthering the interests of the public campaign. Motion seconded and carried.

Dr. E. G. Johnson, of Grand Island, stated that Hall County Medical Society would be glad to have the Association consider holding a convention in Grand Island at some future time, possibly in 1926. This matter was discussed but no action taken.

It was moved by Dr. Banister that the 1925 meeting be held in Lincoln. Motion seconded and carried.

After a discussion of the merits of the Journal, it was moved by Dr. Banister that the House of Delegates go on record as expressing its high appreciation of the excellent work performed by Dr. Long and the Journal Committee in producing the admirable Journal it is.

The House then adjourned sine die.

BOARD OF COUNCILORS

First Session

The first session of the Board of Councilors was held in the Logan Inn, of the Hotel Fontenelle, on Tuesday, May 13th, immediately after the adjournment of the House of Delegates. The meeting was called to order by the President, Dr. Potter.

The following members were present: Drs. Potter, Overgaard, Lehnhoff, Fordyce, Bryson, Preston, Tornholm, Plehn, Cook and Selby.

It was moved that the Board recommend to the House of Delegates that Honorary Membership be conferred upon the following members:

Dr. A. S. von Mansfelde, Ashland
 Dr. I. N. Pickett, Odell
 Dr. Z. T. Daniels, Rushville
 Dr. E. W. Martin, Fremont
 Dr. Gertrude Cuscaden, Omaha
 Dr. C. L. F. Swanson, Omaha
 Dr. Claude Mason, Kin Lung Kiang, China
 Dr. J. M. McKean, Chiengmai, Siam
 Dr. J. A. Ahlquist, Tura, Assam.
 Dr. A. J. Stewart, Shaowu, China
 Dr. C. H. Maxwell, Dakota City
 Dr. J. M. O'Connell, Ponca
 Dr. S. W. Dodge, Fairbury
 Dr. A. L. Matthews, Callaway
 Dr. Noah Hayes, Milford
 Dr. S. F. Sanders, Holdrege
 Dr. H. B. Lowry, Lincoln
 Dr. S. R. Towne, Omaha
 Dr. M. L. Hildreth, Lyons
 Dr. D. T. Martyn, Sr., Columbus

The motion was seconded and carried.

It was moved that \$50.00 be appropriated, as asked by the Librarian, to help defray the expenses of Miss Madalene Hillis to the convention of medical librarians. Motion seconded and carried.

It was moved that the report of the Journal Committee, the report of the Committee on Medical Education, the report of the Delegate to the Council on Medical Education, the report of the Committee on Contagious Disease, the report of the Campaign Committee, and the Secretary's report, be referred to the House of Delegates with the recommendation that they be adopted and published. Motions seconded and carried.

It was moved that the last part of Section 12 of Chapter X, beginning with "Whereupon the Committee on Medico-Legal Defense, etc." be stricken from the By-laws as suggested by Dr. von Mansfelde, and that an amendment be made to Chapter

VIII, Section 9, as follows: "The Committee on Public Activities shall consist of five members. Their duties shall be to cooperate in creating and maintaining a working organization with other prominent public welfare organizations of the state; to direct, manage, supervise and control all public activities as they may outline. This Committee shall serve for a term of five years, providing that in the original organization of the committee, one member shall be elected for a term of one year, one for two years, one for three years, one for four years, and one for five years.

Motion seconded and carried.

Adjournment.

Second Session

The second session of the Board of Councilors was held in the Logan Inn, immediately after the adjournment of the House of Delegates, Dr. Lehnhoff, presiding.

The following members were present: Drs. Lehnhoff, Overgaard, Fordyce, Cook, Tornholm, Bryson, Selby, Preston, Potter and Plehn.

It was moved that the following budget for 1925 be recommended to the House of Delegates for adoption:

Journal Fund, per member.....	\$ 1.75
Councilor District Meetings.....	360.00
Campaign Committee.....	500.00
Secretary-Treasurer's Office	800.00
Secretary-Treasurer's Salary	600.00
Librarian	25.00
Salary of chairman of Defense Comm.....	600.00
Expense of Medico-Legal Defense Comm.....	200.00
Councilors' Expense	332.76
Official Reporter	130.00

Railroad fare of Delegates to A. M. A. and Delegate to Council on Medical Education to be allowed upon proper presentation of amount.

Program Talent.

Motion seconded and carried.

It was moved that the resolution presented by Dr. Hanson, be referred to the Committee on Public Activities. Motion seconded and carried.

It was moved that the communication from Dr. Woodward be referred to the Committee on Public Policy and Legislation. Motion seconded and carried.

REPORT OF THE DELEGATE TO COUNCIL ON MEDICAL EDUCATION OF THE AMERICAN MEDICAL ASSOCIATION

The privilege of returning to this national meeting as your delegate is much appreciated. The opportunity here presented in three short, full days to grasp the status quo of medical education, of medical licensure, of hospital efficiency and plans for public instruction in health matters, is unquestionably great. Too few men ever avail themselves of this opportunity or find occasion to read the printed reports of these meetings. From the opening hour to the closing paper in these great annual congresses of different councils of the A. M. A., the very atmosphere is distinctly different from that of other great medical meetings. The teaching profession in medicine represents a somewhat different type of man than the practicing physician or surgeon. Here teachers far outnumber practitioners, and the latter are for the most part highly trained specialists. In this assembly the general medical man who is

twenty years past his internship days, feels himself out of tune and in the midst of a different crowd. He feels that he has lost step with the real progress of medical science in many of its branches. So, I say it is a great privilege, a real rejuvenation of one's medical spirit to take even a small part in such a congress. To fully emphasize this, one needs only to mention to names of such leaders as Wilbur, Cushing, Billings, Codman, Collwell, Flexner, Kelly (lawyer), Edsel, Dodson, Burton, Hektone, and others. In this report I wish to do very briefly, two things.

First, mention some of the outstanding features of the program.

Second, offer certain criticism of our state association's method of contact with this great constructive assembly.

I. High Points in the Program:

The program was built up on four great features of medical education:

1. Medical school education.
2. Hospital efficiency.
3. State Board for Medical Licensure.
4. Health and Public Instruction.

The whole program was correlated so as to dovetail these different subjects and thus emphasize the importance of their interdependence.

First, Medical School Education is slated for rather radical changes in the curriculum. It is generally believed that the student is over loaded with required didactic work. This excludes the practical clinical work and worse still, it blights the student's chance to develop initiative. No time remains for him to observe, discover and make interpretations for himself. (Medical education is comparatively new and medical science has grown very rapidly from infantile to gigantic proportion. Teachers have not yet encompassed these vast proportions and boiled them down to text book form, as has been done in public schools and colleges. The medical student is required to use a treatise on medicine rather than a text book.

Medical colleges are offering extension courses to general and special practitioners. In some cases they are even carrying it to the doctors in their own counties or cities. This is done by the college teaching staff putting on post graduate courses in near-by standard hospitals or a clinic room mounted on a motor truck. This will probably be urged at the coming meeting of the American Medical Association.

Flexner reported his recent survey of medical colleges and hospitals in Europe and made a comprehensive comparison with similar American institutions.

Second, Hospital Efficiency: The program emphasized factors indicating efficiency of professional service, of administration, of correct economy. The interne and also the non-medical clinical assistant and technician problems were reconsidered.

Third, State Boards and Medical Licensure: This part of the program dealt with two important subjects. One was the qualification of the State Board Medical Examiner. If the curriculum of medical colleges is to be radically changed, then the Examiner must also change accordingly. If the student's head is no longer crammed full of non-practical detail, he should no longer be required to answer such questions, if his license to practice depends upon the

answer. The change must go forward in unison between medical school and state boards.

The other important subject was the legal aspect of our occupation as healers of disease in human beings. The A. M. A. is attempting to bring about through government avenues, a law requiring the same fundamental training for all who participate in the occupation of healing the sick. An eminent attorney of Chicago, is giving much time and study to this problem, and presented an extensive analysis of the subject at the recent congress.

Fourth and finally, there was the report of the Bureau of Health and Public Instruction. This part of the program urged education of the public as to the value of health examination. Much can be done by the practitioner himself, and today medical students are being schooled for this service. Insurance companies appreciate the value of such examinations, and are urging such a program. The little journal, "Hygea", is doing its missionary work in this line. Health inspection of school children, and wider investigation in quarantine work, is exerting a teaching force of value. At this point I want to refer to a Hospital Library and Service Bureau conducted at 22 East Ontario Street, Chicago, under the advisory supervision of the A. M. A. If you are interested in Hospital work in any phase, and wish their help, write them and material will be loaned you free of charge, for periods of two weeks' duration.

II. My Recommendations:

Your present delegate is thoroughly convinced that the proceedings of this great congress have very much of value for every member of our State Association. I am equally convinced that little of this information ever filters through to the average individual member. The points of contact are inadequate. The policy of disseminating the proceedings of such a congress is incorrect if not entirely lacking. You elect a delegate. Perhaps he spends his time and money for you, perhaps not. If he makes a report at all, you receive same respectfully and place it on file. In this way whatever is gleaned is principally buried and only the individual delegate profits. I, therefore, recommend to this body that—

1. Delegates to the National Congress on Medical Education in the future be appointed from the Editorial Staff of our State Journal, and be required to disseminate to the members of the State Association their gleanings at this Congress, through our Medical Journal.

If not a member of the editorial staff of our journal, then the delegate should be required to make a comprehensive report of the Congress upon the floor of the general assembly of our State Association meetings.

2. I further recommend that the State Association pay the actual expense of its delegate to and from each Congress.

Respectfully submitted,

J. S. Welch.

REPORT OF COUNCIL ON MEDICAL EDUCATION

Your council desires to submit the following report:

This year the American Medical Association has not requested a detailed survey of things medical in Nebraska. Our two medical colleges are of such high standards that only suggestions of encouragement

are warranted. Our hospitals desiring interns are so enthusiastic in their endeavor to furnish high standards of interne service that the American Medical Association did not request a re-survey of these hospitals. Our inspection of all other hospitals in the state has never been requested by the National Council, but has been entirely voluntary on the part of your committee. We have considered it worthy of the effort, believing it would stimulate the smaller hospitals to perfect their service to the patient, nurse and doctor.

You might be interested to know that Dr. N. T. Collwell, Secretary of the Council on Medical Education and Hospitals of the American Medical Association has voluntarily rated Nebraska and her State Medical Association among the first in activities along this line. Coming as it did, after his attendance at the annual meeting of the Association of American Medical Colleges held at Omaha, Nebraska, in February, I consider this a real compliment to our State Association, our Medical colleges, our hospitals and our fellow member, Dr. Irving S. Cutter, who this year is president of this national organization.

Your committee further desires to call your attention to certain general features pertaining to medical education in our state, not specifically emphasized by the A. M. A.

First, the increase in number of relatively large, well standardized hospitals over the state. I refer to such institutions as the new Methodist Hospital at Scottsbluff. This is a new hospital, modern to the last word, and organized under a trained hospital supervisor. The staff is making every effort to establish the highest standards of efficiency. The new hospital at Fairbury deserves your encouragement. The new wing and power plant at St. Francis, in Grand Island, is most excellent. Sister Superior Huberta, the chaplain and the staff deserve our support and favorable mention. The new city General Hospital in Lincoln, and many other hospitals over the state making substantial increases in beds, should be counted in this list. We believe this indicates positive progress, particularly since it has occurred during the post war financial depression.

Second: The standards of efficiency in all these new hospitals has been established relatively high. The efficiency in most of the other large hospitals has probably maintained standards of previous years, or better. There has been some just complaint of the rise in cost per hospital day. This should be judiciously watched by the board of directors and hospital superintendents, and means established in the hospital policy for curtailment. However, it must be without a lowering of the efficiency. Certain students of the problem feel it can be done by shortening the stay in the hospital through more rapid diagnostic work and earlier beginning of convalescence at home; by lessening unnecessary and expensive laboratory work in routine cases; by more economic purchasing in all departments; by more care in the use of expensive materials, special nurses, etc. In the last analysis, it is likely that the increase in cost per day has not risen out of proportion to increase in efficiency considering the economics of the times. Even so, is not a higher degree of efficiency obtainable only at a higher ratio of cost?

Thirdly: The hospital personnel, such as super-

visors of history files, of departments, of training school, of diet kitchens, the technicians and laboratory assistants, all show evidence of improvement. Such features in turn reflect favorably upon the training school. We would call your attention to the fact that the Catholic Hospitals of our state now have at their command the use of a special training school at Spring Bank, Wisconsin. It was established by the National Association of Catholic Hospitals and provides special training for all departments, from the Superior Sister to the laboratory technician, from the operating room superintendent to the purchasing agent. Its courses are open to others who wish to register.

Fourthly: We call your attention to certain changes in the internship problem. More interns are now available, owing to the increase in the number of medical school graduates. According to the present enrollment in medical colleges, this number will further increase during the next two years. If your hospital is concerned, we recommend that you get a rating through your committee and the A. M. A., so that the medical Colleges will know what service you are prepared to render their graduates.

Finally, we note some evidence that health education is reaching the laity more and more. This is shown by the increased number of health examinations, the probable earlier appearance of cancer patients, etc. Much room for progress exists in this field. There are no funds available. The association has no definite policy. The little journal, "Hygeia", is attempting the task for the A. M. A. We can at least lend moral, editorial and subscription support.

Along this and many other lines of medical education, we recommend that you, as members of the State Association, give to your future council more constructive criticism and more helpful suggestions than you have given to us.

Respectfully submitted,

J. S. Welch.

A. D. Dunn.

I. S. Cutter.

REPORT OF THE COMMITTEE ON JOURNAL AND PUBLICATION

The Journal continues to prosper financially as shown by the audit. The necessary expenses for 1923 were increased in round numbers by one thousand dollars, and this expense will continue, possibly increase during the current year.

The business management ably conducted by Miss Anne Erixon since the death of Dr. J. M. Aikin, will be taken up by another and untried person, June first. We count on a continuance of good advertising patronage, but the element of uncertainty should not be lost sight of, in planning for the future.

Many favorable comments on the scientific and literary value of the Journal impresses the Publication Board and editor with the idea that the Journal is growing in importance in the estimation of the profession.

The Board asks a continuation of the appropriation of \$1.75 per member for the ensuing year.

F. A. Long, Chairman,

B. F. Bailey,

W. O. Bridges.

REPORT OF THE LIBRARIAN

There is to be a meeting of the Medical Library Association in Chicago, June 9th and 10th, 1924.

Since our Library has had the advantage of the association with that of the College of Medicine, University of Nebraska, and since essentially all of our work has been done gratuitously by their Librarian, Miss Madeline Hillis; it seems to me the least we can do is to help defray a part of her expenses to this meeting. Therefore, I am urging you as the governing body of this Association to appropriate the small sum of \$50.00 in favor of Miss Hillis for this purpose.

The library has been used to advantage by various members of this society and it is hoped that an increased number will derive benefit in the future. The unusual feature of having access to the library of the College of Medicine, University of Nebraska, affords all a rare opportunity for research work. It is a pleasure to be able to state that this library is excelled by but few medical libraries in this country.

Respectfully submitted,
W. P. Wherry, Librarian.

ANNUAL SECRETARIES' MEETING. SECRETARY'S REPORT

CULTS. The medical profession should get together and work as a unit, each one for everyone. Carry to the laity the story of things done and doing for humanity. Tell the story of Medicine and medical organization, how they work and why they are working. Prove to the people that medicine's great aim is for humanity and is not monopolistic or selfish. The doctor himself, must deliver 100% to his patients. They must be examined and the cause of their trouble learned to the best of each one's ability. Don't attack the cults directly or indirectly. Carry your truths to the people as cults have their supposed truths, only do a better job.

POST GRADUATE COURSES. These should be organized with two aims in view:

1. To give post graduate instruction to the profession.
2. To give service to the deserving.

They should be organized in two branches:

I. Post graduate courses given and managed by the medical colleges of the state. They should be short and intensive. Teach as much as possible in as short time as possible. The cost should be kept at a minimum.

II. Traveling Clinics. These to be diagnostic only, so far as they concern the patient. However, they are to be used as teaching clinics as well, thus fulfilling the function of post graduate courses also. All patients examined by these clinics and found to need treatment would be turned back to the family physician. These clinics would be organized from members of the State Association and travel in groups. Each group would contain an internist, a surgeon, a laboratory man, an x-ray man and so forth, so that each one would be complete in itself. They would go to a selected place, as the county seat. They would go only at the invitation of a county society and work under its auspices and help. The length of time each group would stay in a community would be short; how short would be regulated by the local conditions.

PUBLIC HEALTH EXAMINATIONS. Through the press and through speakers, carry a campaign to the laity, on the advisability and the necessity of regular health examinations at stated intervals by

the family physician. This work is to be carried on by the State Association working through the County Societies. Each County Society to do this work in its own county, either with its own members, or by invited speakers, or writers, or both.

COOPERATION WITH OTHER ORGANIZATIONS. In this work the State Medical Association would organize a department which would ally itself with like departments from other organizations which do a public service work; such as the State Dental Association, the State Nurses' Association, the State Tuberculosis Association, the State Child Welfare Association, The University, if possible and all others that can be interested. The idea in this sort of a group would be that as all these organizations have many things in common they could work together to better effect for these things, and could help each other in things, that may be peculiar to one or the other. Also if so organized much duplication of work and much friction could be limited. This group would also represent such a large number of people that they could make their influence felt when occasion required.

RADIO. The members of The State Association should avail themselves of every opportunity to broadcast Medical subjects. They should announce themselves as Dr. — speaking for — Association.

INSURANCE. In 1922 the doctors of the United States spent \$2,000,000.00 for automobile insurance. They received \$700,000.00 for claims. Thus \$1,300,000.00 went to pay overhead and to adjust claims on more hazardous classes of risks. Statistics show that the doctor is a high class risk from this point of view. The Virginia Secretary, an old insurance man, is working to organize a Doctors' Mutual Automobile Insurance Co. If at least 25,000 Doctors will pay the regular rate the first year, then the insurance can be materially cheapened. It is hoped that every doctor will avail himself of this opportunity when this proposition becomes matured and is brought to his notice.

GUESTS. To promote more interest and friendliness between the different State Associations and their members it is suggested that the State Association at its annual meeting invite some prominent member or members from other Associations to attend our meeting, to be present the entire time of the session, and to be given the privilege of the floor, and to discuss papers and speak as he wishes. He may be one of the guests who delivers an address or not. In this way it is thought that friendships can be formed which will add to the closer unity of the doctors over the country.

MEMBERSHIP. Do all that can be done to increase the membership of the Association. This, of course, must be done by the County Society, but with the aid of the State Association. However, it is no longer the slogan to take in all doctors, but it is advised that each possibility be looked over carefully, and only those taken who would live up to our traditions. This does not mean that we should be sectarian.

PUBLICITY. The American Medical Association has contracted with a publicity bureau which represents 100 newspapers throughout the country, to publish articles relative to general medicine as they are furnished to them. It would also be a good plan

for the State Association and County Societies in the locality of each.

FIELD SECRETARY. This office to be created and filled when such a man can be maintained. He would be a full time man. His duties generally would be to travel over the State, visiting the County and District Societies, helping them in their educational and organizing work, and giving his advice wherever needed. He would, of course, work with and under a delegated board from the State Association.

FINANCE. All of the subjects practically will take time and money to develop and maintain. All of this work should be built up solidly and, therefore, not too rapidly. Everything must be done after mature deliberation and not hysterically. Always while working towards the culmination of these things, ways to finance them must be provided. This can be done by raising the dues, by public donation, or by endowment. The last two at the present time are not at hand. Raising the dues at this time is hardly advisable. However, all must be considered and worked for as we go along. At first much of this work will probably have to be done gratuitously, then as results begin to come, the finance will be found.

R. B. Adams, Secretary.

CAMPAIGN COMMITTEE

The Chairman of the Campaign Committee begs to report that since the last meeting things have been rather quiet. We did put on a little campaign, as you all know, against a man who was running for the United States Senate because he had been such an arch enemy of the medical profession in the State Legislatures. Before long, however, the political pot will begin boiling again for the fall election and I imagine your Committee will have enough to do.

Financial statement herewith:

Balance on hand May, 1923.....	\$220.65	
Expenditures:		
Stamps & envelopes.....	\$24.98	
Long Distance calls.....	5.70	
Stationery, Stenographer,		
etc.	35.00	65.68
		<u>\$154.97</u>

Respectfully submitted,
K. S. J. Hohlen.

REPORT OF THE COMMITTEE OF THE CARE AND PREVENTION OF CONTAGIOUS DISEASES

Our experience in contagious disease for the past year has confirmed all the old theories and we feel added new ones. While we had no severe outbreak of any one infection, yet there have been sporadic cases and mild epidemics of almost all the contagion.

DIPHTHERIA, being one of the most dreaded, we will devote some time to its discussion. Its worst spread is occasioned by diphtheria carriers who go on their own sweet way infecting all with whom they may come in contact. A carrier in a school room is more dangerous to public welfare than a dozen seriously sick patients with the disease. Fifteen thousand (15,000) lives of children under the age of fifteen is too great a toll for America to pay all her

young childhood from this disease, especially when we have practically no deaths when antitoxin is used early and given in sufficient doses. The practice of giving small repeated doses of antitoxin to any case of diphtheria is a practice which we condemn. No case, however mild, should receive less than 10,000 units of antitoxin and when seen after 48 to 72 hours have elapsed 50,000 units of antitoxin should be the minimum dose. It is the practice of too many physicians to wait for a laboratory report on their cultures, when they are pretty positive from clinical symptoms that they are dealing with diphtheria. The early administration of antitoxin will save many lives and the laboratory report can be obtained afterwards and if you have made a mistake there is no harm done the patient. Whenever feasible in severe cases antitoxin should be given intravenously. The immunization by toxin-antitoxin is the ideal preventive and its use has made for itself an enviable reputation and we recommend that physicians familiarize themselves with its technique and its great advantages and recommend it to their patients. If it were possible to immunize all children under five years of age, diphtheria would be eliminated from our schools. Of the 8500 cases Schick tested and immunized reported in the state, not a single one has contracted the disease.

SCARLET FEVER. There is unfortunately no known method of immunization against this dreaded disease and our chief method of prevention is by isolation.

ANTERIOR POLIOMYELITIS. It has had quite a run the past year and with dire after effects, and while strict quarantine is to be enforced there is no known treatment that has stood the test, unless it is the flexner serum, and its early administration is imperative.

SMALLPOX. Vaccination develops a high degree of immunity, but this immunity is not absolute. When the disease attacks vaccinated persons it is, as a rule, mild and the mortality is low.

TYPHOID FEVER. The value of typhoid inoculation as a prophylactic measure has been definitely proven as a result of the experience of all the beligerent countries during the world war. Typhoid fevers are modified and the mortality greatly reduced by inoculation.

INFLUENZA. No effective vaccination for inoculation against this disease has been discovered.

A. S. Pinto,
Clyde Moore.

HOUSE OF DELEGATES ATTENDANCE

County	Delegate & Alternate	Meetings		
		1st	2nd	3rd
Adams.....	R. D. Martin.....	1		
Boone.....	F. M. Barns.....	1		
Box Butte.....	H. H. Copsey.....	1	1	
Buffalo.....	L. M. Stearns.....			
Burt.....	Harry W. Benson.....	1		
Butler.....	H. E. Burdick.....			
	J. G. Morrow.....			
Cass.....	O. E. Liston.....			
	C. H. Longacre.....			
Cedar-Dixon-Da- kota-Thurston- Wayne.....	Lucien Stark.....	1	1	1
Chase-Dundy- Hayes-Hitchcock.....				
Clay.....	G. H. Bentz.....	1	1	

County	Delegate & Alternate	Meetings			F. H. McCabe	C. A. Selby	F. W. Plehn
		1st	2nd	3rd			
Cuming.....	H. W. Francis.....					1	1
Custer.....	F. A. Burnham.....	1					1
Dawson.....	M. S. Moore.....						
	J. W. Bozarth.....	1		1			
Dodge.....	J. S. Devries.....	1	1	1			
Fillmore.....	J. Bixby.....						
	E. A. Harvey.....						
Franklin.....	R. B. Campbell.....	1					
Furnas.....	F. H. McCabe.....						
	A. L. Kee.....						
Gage.....	C. G. Baird.....	1	1	1			
Hall.....	E. G. Johnson.....	1	1	1			
Hamilton.....	J. M. Woodard.....						
Harlan.....	J. N. Campbell.....						
	W. G. Rundle.....						
Holt.....	L. A. Carter.....	1	1	1			
Howard.....	A. H. Holm.....						
	M. O. Arnold.....						
Jefferson.....	W. L. Welsh.....	1	1				
Johnson.....	C. D. Barnes.....	1					
Kearney.....	F. A. Wells.....	1	1	1			
Keith-Perkins.....	C. F. Heider.....	1	1	1			
Kimball.....							
Knox.....							
Lancaster.....	K. S. J. Hohlen.....	1	1	1			
	H. H. Waite.....	1		1			
	Geo. W. Covey.....			1			
Lincoln.....	Theo. J. Kerr.....						
	E. G. Dovey.....						
Madison.....	A. E. Gadbois.....						
	L. L. Nelson.....						
Nance.....	Homer Davis.....	1					
Merrick.....							
Nemaha.....	I. W. Irwin.....	1					
Nucholls.....							
Omaha-Douglas.....	J. A. Henske.....	1	1	1			
	Max Emmert.....	1	1	1			
	Louis E. Moon.....	1		1			
	Clyde Moore.....	1		1			
	Lynn Hall.....	1					
	G. P. Pratt.....						
	W. B. Christie.....	1		1			
Otoe.....	T. L. Weeks.....						
	S. S. Wilson.....						
Pawnee.....	J. F. Prendergast.....						
	W. R. Boyer.....						
Phelps.....	K. P. Palmer.....						
Pierce.....	J. P. Jensen.....	1	1	1			
Platte.....	F. H. Morrow.....	1	1	1			
Polk.....	C. L. LeMar.....						
Red Willow.....	J. M. Willis.....						
	W. D. Mackechnie.....						
Richardson.....	C. L. Hustead.....	1		1			
Saline.....	Porter Dodson.....						
	A. A. Conrad.....						
Saunders.....	F. T. Wright.....	1					
Scotts Bluff.....	T. J. Vanderhoof.....		1	1			
Seward.....	Bert Morrow.....						
	H. B. Cummins.....						
Thayer.....	H. W. Saylor.....		1				
Valley.....							
Washington.....	E. R. Stewart.....	1	1	1			
Webster.....	R. S. Martin.....		1				
York.....	S. O. Harris.....	1	1	1			
Council							
A. P. Overgaard.....		1	1	1			
H. J. Lehnhoff.....		1	1	1			
C. P. Fordyce.....		1	1				
A. E. Cook.....		1	1	1			
S. A. Preston.....		1	1	1			
Frank Tornholm.....		1	1	1			
H. E. Potter.....		1		1			
W. J. Douglas.....							
R. D. Bryson.....		1	1	1			

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President—	Morris Nielsen.....	1	1	1
Secretary-Treasurer—	R. B. Adams.....	1	1	1
Librarian—	W. P. Wherry.....	1	1	
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	M. L. Hildreth.....			
	A. S. von Mansfelde.....	1	1	
	J. E. Summers.....	1		
	W. O. Bridges.....	1	1	1
	A. R. Mitchell.....	1	1	1
	H. M. McClanahan.....			1
	A. F. Jonas.....			
	F. A. Long.....	1	1	1
	Harold Gifford.....			
	L. M. Shaw.....			
	P. H. Salter.....			
	J. P. Lord.....			
	I. N. Pickett.....			
	J. P. Gilligan.....	1	1	
	E. W. Rowe.....	1		1
	W. F. Milroy.....	1		
	C. L. Mullins.....			
	J. M. Banister.....	1	1	1
	H. W. Orr.....			1
	M. S. Moore.....	1		1
	B. B. Davis.....	1		
	B. F. Bailey.....	1	1	1

MEDICAL TREATMENT OF PEPTIC ULCER WITHOUT ALKALIS

In the opinion of Anders Frick, Chicago (Journal A. M. A., Feb. 23, 1924), the chief therapeutic indications for the treatment of gastric ulcer should be: To check excessive secretion of gastric juice, to inhibit excessive peristaltic contractions as far as possible, to relieve intragastric tension and pyloric spasm, and to cause inflammation to subside. Frick pleads for: (1) A sedative and antiphlogistic treatment of peptic ulcer in cases in which no surgical complications are present. (2) The systematic and prolonged use of bismuth subnitrate "a hautes doses", as advocated by Trousseau. (3) The restrictions of the use of alkalis to only those cases of peptic ulcer in which bismuth fails to relieve pyrosis. (4) The ambulatory management of those cases of peptic ulcer which are not "acute" and of those which are not complicated by marked anemia, gastric dilatation or gastroptosis. (5) The prevention of recurrences of peptic ulcer or, in other words, for the overcoming of the so-called tendency to peptic ulcer, by the eradication of infectious foci, by the exercise of moderation in eating, drinking and smoking, and by the establishment of spontaneous evacuation of the bowels. (6) The immediate use of bismuth subnitrate, for a short fast, and for a gradually increasing diet in case symptoms of peptic ulcer should recur.

In Memoriam

Take them, O Father, in immortal trust!
Ashes to ashes, dust to kindred dust,
Till the last angel rolls the stone away,
And a new morning brings eternal day!

Inscribed to the Memory of

Robert McConaughy, Died Dec. 18, 1923
President of the Nebraska State Medical Association, 1899-1900



Joseph Turner Steele	May 25, 1923
Alexander H. Miller	June 20, 1923
Clement A. Stone	October 30, 1923
D. S. Woodard	November 28, 1923
Leo Dow Rose	November 13, 1923
George H. Brash	February 28, 1924

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MANUSCRIPTS — NEWS NOTES — REPRINTS — ADS

The reader will please bear in mind that manuscripts, news notes and all correspondence pertaining to the editorial management of the Journal should be sent direct to the editor at Madison, Nebr.

The reprint business is handled by the printer of the Journal — The Huse Publishing Co., Norfolk, Nebr.

Subscriptions, advertising matter, etc., should go direct to the business manager, Nebraska State Medical Journal, 1012 Terminal Building, Lincoln, Nebr.

TONSILLECTOMY IN ITS RELATION TO THE RECURRENCE OF RHEUMATISM

Ingerman and Wilson (Jour., A. M. A., Mch. 8, 1924), as a result of the study of several hundred cases, make the following observations:

"A study of the relation between tonsillectomy and the occurrence of rheumatic manifestations showed that 76 per cent of eighty-eight cases have been followed by recurrence of rheumatic manifestations in from one to eleven years after tonsillectomy. In a control group of ninety-seven cases without tonsillectomy, studied over a similar period, 80 per cent showed recurrence of rheumatic manifestations. Non-recurrence of rheumatic manifestations has been observed in 24 per cent of eighty-eight cases with tonsillectomy, and in 20 per cent of ninety-seven cases without tonsillectomy. Of eighteen cases with incomplete tonsillectomy, 78 per cent were followed by recurrence of rheumatic manifestations, and 22 per cent by nonrecurrence. All of these findings suggest a consideration of other less mentioned sources of infection. Any tissue, previously the seat of a rheumatic infection, would seem to be the most obvious source or focus for reinfection".

THE CHICAGO A. M. A. CONVENTION

The seventy-fifth annual session of the American Medical Association held in Chicago the middle of June, has passed into history as the largest gathering of medical men in the annals of medical organization. The total registration, 7668, figures over 1200 more than the largest registration of any previous session. Nebraska physicians registering totalled 111.

The meeting place, the Municipal Pier, was well-nigh ideal for the convention from the fact that there was ample room for registration, exhibits and section meetings all in close proximity — all in a row so to speak. The registration and exhibit room was artistically decorated and the booths standardized and uniform. More than 150 commercial exhibits were placed. The scientific exhibits larger than ever before, attracted much attention. The moving picture theatre of medical subjects was in continuous operation. All the sections were crowded each day.

In a meeting of such tremendous importance, attended by the leaders of medical science in America it was hard to mention the subjects and discussions of greatest importance, for all may be said to have equal importance. Perhaps nothing attracted more attention than the diagnostic clinic and papers on insulin and diabetes.

Nebraskans on the program were Dr. Harold Gifford, "Miscellaneous Notes on Glaucoma"; Dr. Floyd Clarke, "Rosenow's Serum in the Prevention of Paralysis in Anterior Poliomyelitis"; Dr. Edwin G. Davis, "Perineal Prostatectomy with Particular Reference to Hemostasis and Sacral Anaesthesia"; Drs. H. W. Orr and J. E. M. Thomson, "Maintaining Length and Position in the Treatment of Compound Fractures".

Dr. W. D. Haggard, Nashville, Tenn., was elected president and the place for next meeting was fixed at Atlantic City.

PARTITIONED SKULLS FOUND

Archeological researches in the valley of Mexico have brought to light remains of a very ancient civilization. Partitioned skulls the like of which have never before been seen, have been uncovered. An article in the Dearborn Independent says:

"These skulls are of normal adult size. They have a distinct partition of hard bone, running from the under surface of the skull inward, thick at the skull and tapering to a fine point the farther in toward the brain matter it extends. Some of these partitions are as much as three-quarters of an inch deep, marked and distinct and hard as bone can grow."

Dr. George H. Simmons, Editor, Journal A. M. A.

Dr. George H. Simmons has been editor of the Journal of the American Medical Association for twenty-five years. A testimonial banquet attended by 400 Fellows was tendered him at the Congress hotel, Chicago, on the evening of June 9th, 1924, on which occasion a life size portrait of himself was presented to Doctor Simmons.

Addresses were made by Drs. Harvey Cushing, Frank Billings, William H. Mayo and Mr. Will Owen Jones, editor of the Lincoln State Journal. An address by Dr. Hubert Work, unable to be present, was read. Dr. W. S. Thayer presented the portrait and response was made by Doctor Simmons.

When Doctor Simmons became editor of the Journal A. M. A., the circulation was 8,000; today it approximates 90,000. He made it the greatest medical journal in the world. The figures above also approximately represent the membership of the A. M. A., in the two periods.

Dr. George H. Simmons was born in England in 1852, came to America at an early age, was a student of the University of Nebraska in his 'teens, studied medicine in Chicago and was graduated from the General Medical college and Rush Medical college and located in Lincoln where he was in practice when called to the editorship of the Journal American Medical Association



DR. GEORGE H. SIMMONS

in February, 1899. In June, 1899, he was also elected secretary of the American Medical Association and continued as secretary-editor until 1911, when he resigned the secretaryship and since then he has been editor and general manager.

Doctor Simmons was secretary of the Nebraska State Medical Society (as it was then known) from 1896 to 1899. While secretary he established

the Western Medical Review and conducted it on such a high plane as to attract the attention of the trustees of the American Medical Association by whom he was called to Chicago to take up his greater work on the Journal American Medical Association.

The old "war horses" of the Nebraska profession remember Doctor Simmons as a co-worker, very well, and old and young members of the profession will be interested in this slight tribute to one who has done more for organized medicine and medical journalism than any man in history.

On behalf of the organized profession the Nebraska State Medical Journal congratulates Dr. George H. Simmons on his long years of service, the success he has attained as a medical editor and organizer and wishes him many more years of usefulness.

Nebraskans attending the banquet were Drs. A. F. Jonas, A. R. Mitchell, H. W. Orr, J. P. Lord and F. A. Long.

THE SUMMER AND THE INFANT

To children, the warm season brings the dread "summer complaint", the "teething rash", the "summer cold" and the so-called bugaboo "second summer". These are all justified in the anxious mother's mind, and, to a limited degree, also, in fact.

The protracted heat of summer affects the sensitive infant physiology in direct proportion to the efforts made to assist the child in adapting itself to its surroundings. The oppressive humid heat lessens the infant's ability to digest the food formerly well tolerated. To this may be added the unsuspected dangers of spoiled food.

The greater surface area of the infant in proportion to the body volume, provides a more extensive radiating surface in contrast to the adult. The infant is thereby the more sensitive to atmospheric conditions.

Of the gastro-intestinal disturbances encountered, fully 85% are diarrhoeal, due to fermentative processes in the intestinal contents. This, of course, excepts occasional epidemics of true infectious diarrhoea of dysenteric origin. A lesser number are due to putrefactive changes in the intestinal contents and to the ingestion of indigestible substances, such as green apples, grape skins, etc. These by-products of bacterial digestion are the direct result of a preponderance of the carbohydrate or protein which has entered the intestine either through an unsatisfactorily balanced diet or by reason of the slowing up of the digestive processes, with the passage thereon of unsplit or incompletely split foods. Fatty acids in excess, undoubtedly stimulate peristalsis and are a factor in diarrhoeal disturbances.

The logical care of the infant in summer entails a greater effort to prevent the ill effects of over heating and over eating. Here we mark a tremendous advance in preventive medicine. The infant's clothing now conforms to the season. Cotton is preferable to the flannel of former years, bands are dispensed with, open air is urged. The child is given a chance to keep cool. Herewith pass many heat rashes, so-called teething rashes and summer colds.

Untiring attention to the handling and preservation of milk especially, will reduce to the minimum the introduction of infection from without. Dysentery, like typhoid, is transmitted by fingers and food. The artificially fed infant, of course, does not share

the immunity of the breast fed baby in matters of diet, but both alike may be over clothed. The little runabout, however, regardless of his early history, is exposed alike to all the adversities of this trying season. We cannot tell in figures of the incidence of disturbances attendant upon summer, but the toll in little lives we have read too often in hospital mortality rates.

How much can be accomplished by the saner careful methods of supervision and education of the mothers, is read in the report of the Omaha Visiting Nurses' Association of the work of its infant welfare division for the year 1923. Of 1520 registered (all under two years) there were 11 deaths, of causes as follows: Decomposition, 1; Broncho-pneumonia, 4, (one complicating whooping cough); Meningitis, 1; Tuberculosis, 1; Congenital lues, 1; Intussusception, 1; Diarrhoea, 2; Dysentery, 1.

—J. Harry Murphy.

TOXIN-ANTITOXIN

With the death rate of diphtheria (now an entirely preventable disease) running much higher than it should in our community and others as well, when physicians high up in their own special fields admit their haziness on the subject and others opposed to its use, it is high time that the medical profession was re-educating some members within its own ranks.

In the field of preventative medicine one has but to call attention to the accomplishment of vaccination for small pox and typhoid fever. In toxin-antitoxin we have another great contribution to the field of preventative medicine. Now past its experimental stage its scientific truth has been proven beyond a doubt by large amounts of experimental work. It has proven its worth and has come to stay. No physician should have any more fear of his children contracting diphtheria after immunization, than contracting small pox after vaccination. We should set an example by having our own children immunized. How many physicians neglect having their own children immunized until an emergency arises? What is more simple than giving a hypodermic injection at weekly intervals for three weeks and at the end of four to six months, do a Shick test to determine whether or not we have established an immunity. This great contribution to preventative medicine, as great as the prevention of small pox or typhoid fever, and

equal to Banting's discovery of insulin, should have the support of every physician. He should herald it to the public at every opportune time.

Contagious disease is the dread of every physician who has charge of institutional work. I have had charge of an institution with 110 children under 15 years of age, the majority under ten years. It was the lot of this institution to have a great deal of diphtheria. We were continually isolating and administering antitoxin for diphtheria. Two and one-half years ago I gave toxin-antitoxin to all this group. I am able to report that there has been but one case of diphtheria to my knowledge in this institution in the last two and one-half years and that one case was within the six month period required for immunization. What more could one expect to accomplish? I think every child should have toxin-antitoxin at one year of age.

Every practicing physician in the field of modern medicine, with its numerous specialties, should acquaint himself thoroughly with every epoch making contribution. He should know and use those things which make medicine approach an exact science.

—E. V. Wiedman.

CONSERVATIVE TREATMENT OF FRACTURES

With the event of the Lane plate open operation on recent fractures was greatly overdone, and with disastrous consequences. The brilliant results obtained by Lane were due to his highly developed "non-contact" technique, a procedure that calls for a corps of trained assistants devoting their main energies to that particular work. It is not to be wondered at that in the hands of the average surgeon the outcome in many cases was not so gratifying. Metal bands, nails, plates, heteroplastic and autogenous grafts have been used. All these have their place, but it is limited. In the enthusiasm for open operation conservative treatment seems to have been forgotten. It is very fascinating to cut down on a fracture, bring it in perfect anatomical alignment and fix it securely, but it is not so fascinating to the patient when infection develops, as it is likely to do especially in the presence of non-absorbable plates. Closed treatment should be the line of treatment in the great majority of cases, and operation used as a last resort. Of course, there are certain fractures in which it is self-evident that surgical measures are necessary, but these are in the minority.

Careful and painstaking adherence to the principles of extension and counter-extension will often save a patient an unnecessary operation, with all its risks and uncertainties. The tongs will in many cases of fracture of the femur maintain reduction, where the old Buck's extension is inadequate. The Whitman method in treatment of fracture of the neck of the femur makes operation rarely necessary in this class of cases. The autogenous bone graft is probably the best of all operative procedures, particularly in fractures with non-union or with loss of bone substance. Operation in fracture cases should never be undertaken lightly and should be done only in cases where reduction cannot be maintained any other way.

—J. Frederick Langdon.

THE LEGION PROVIDES HOSPITAL ROOMS FOR ITS UNFORTUNATE MEMBERS

A room has been contracted for by the year in St. Joseph's Hospital, Omaha, for the use of Veterans of the late war, and their dependents, who are unable to pay for hospital care. Similar rooms will be contracted for in other hospitals throughout the state at as early a date as possible so that these rooms will be available to as many men who require hospital treatment as can be brought to them. This is an additional part of the programme laid out by the State Relief Fund Committee of the American Legion who will pay for these rooms out of the State Relief Committee's funds.

We believe that this will be an admirable arrangement for both the hospitals as well as the Veterans and their families. The hospital will have one room which will be a yearly revenue producer and from which the yearly revenue will be known in advance. The Veteran and his family will not have to feel as though they were objects of charity and will feel free to occupy these rooms for the benefit of themselves and thus many cases requiring hospital treatment will be handled that could, in no other way, be brought to hospitals. When the rehabilitation of these who require it is complete, the economic loss to the community will be greatly diminished and the Veteran or some member of his family will still feel that he has not been an object of charity.

In order to obtain this room, all that is necessary is for the Veteran to apply to the State Relief Fund Committee's representative in his own town and if the room be un-

occupied at that time, he will be admitted and cared for. Thus the Legion is carrying on its policy of caring for its disabled and in taking care of its own comrades.

—Lucien Stark.

EDITORIAL PARAGRAPHS ABOUT THE A. M. A. MEETING

Did your wife's feet ache?

She who knows, says it was noticeable that but few doctor's wives had bobbed hair.

It is thought that the recently heralded cancer cure is not proven. The promoters of the supposed specific have so far declined to give to special medical investigators certain fundamental facts; but they have shown supposed results from the treatment.

There was a University of Nebraska Medical Alumni banquet at the Hamilton Club, Wednesday noon, under the leadership of Dr. I. S. Trostler, '04, Chicago. Some thirty attended.

Essayists at A. M. A. meetings should practice to speak louder. A friend suggests that there should be established in every medical college a chair on public speaking—to which the editor would add, writing.

Coincident with the opening of the A. M. A. meeting the price of Insulin was reduced one-third by the American manufacturers. Present prices are U-10 .60, U-20 \$1.00, U-40 \$1.80.

Dr. Elliott Joslin of Boston gave a diagnostic clinic. He had 25 of Woodyatt's patients on the rostrum. Nothing could have been more wonderful and impressive.

A speaker predicted that in a short time we would immunize our children against diphtheria and scarlet fever at the same time by the use of a mixed toxin-antitoxin.

Dr. Martin H. Fisher said uremic symptoms mean edema of the brain—not of the kidney. Dry skin as in scarletina means a dry kidney.

One essayist said hypertension is always due to infection of the blood vessels.

It is said that experiments tend to prove that x-ray and radium will clear up infections of the teeth. This has been observed as an incidental effect by different ones following the use of the ray and radium on lip cancers.

Dr. Elliott Joslin said diabetes is fifteen times as frequent after forty as before forty.

The address of Dr. George Vincent, president of the Rockefeller Foundation before the Woman's Auxillary A. M. A. Dinner at the Edgewater Beach hotel, was a very inspiring rapid-fire speech in which he forcibly presented the need of a woman's auxillary and painted in glowing words the possibilities of the movement as an aid to the organized medical profession.

A prospective cure for tuberculosis was announced by Dr. H. J. Corper, director of the research laboratories of the National Jewish Home for Consumptives, Denver. It is based on the discovery that 3% of carbon dioxide inhibits the growth of tubercle bacilli and that 15% kills them.

"OURSELVES AS OTHERS SEE US"

My dear Dr. Long:

I received the May edition of the Nebraska State Medical Journal containing an account of the Sectional meeting of the American College of Surgeons held at Omaha on February 18th-19th last. I want to congratulate you sincerely on this excellent report, scientifically and otherwise.

Your publication is, in my opinion, the most credible and useful state publication I know of in the United States because it is entire "meat" throughout. The style, illustrations and data are all points worthy of high commendation. I appreciate very much your sending me a copy.

Yours very truly,

Malcolm T. MacEachern.

Associate Director, American College of Surgeons.

ANNOUNCEMENT

POST-GRADUATE MEDICAL COURSE — UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE

Because of the inability of a number of practitioners of Nebraska to leave their work, it has been deemed wise to postpone the Post-Graduate Medical Course previously announced for June 16 to 18, inclusive. If there is a reasonable demand for the course it may be offered during the month of October, 1924.

The course which has been offered for the past four years will be continued but announcement will depend upon dates suitable to physicians desiring the course. If you would favor the month of October, please so advise.

Irving S. Cutter, Dean.

CREIGHTON UNIVERSITY, COLLEGE OF MEDICINE GRADUATES 1924 AND INTERNSHIP ASSIGNMENTS

William J. Adams, Omaha, Neb., St. Paul's Sanitarium, Dallas, Texas.

A. C. Antony, Omaha, Neb., St. Joseph's Hosp., Omaha, Neb.

M. H. Beitenman, Dewitt, Iowa, St. Margaret's Hosp., Kansas City, Kansas.

B. C. Burns, Manhattan, Kan., St. Joseph's Hosp., Kansas City, Mo.

Canty, C. R., Butte, Mont., St. James Hosp., Butte, Mont.

M. H. Carrig, Columbus, Neb., Mercy Hosp., Chicago, Ill.

A. G. Carroll, Butte, Mont., St. Joseph's Hosp., Omaha, Neb.

F. I. Casey, Omaha, Neb., St. Paul Sanitarium, Dallas, Texas.

F. E. Cramer, Grand Island, Neb., St. Joseph's Hosp., Denver, Colorado.

D. L. Delehant, Beatrice, Neb., Mercy Hosp., Co. Bluffs, Ia.

T. G. FitzGibbon, Sioux Falls, S. D., St. Joseph's Hospital, Omaha, Neb.

J. I. Fitzsimmons, Omaha, Neb., St. Joseph's Hospital, Omaha, Neb.

C. J. Goebel, Hartington, Neb., St. Paul Sanitarium, Dallas, Texas.

J. M. Grace, Colorado Springs, Colorado, St. Joseph's Hosp., Omaha, Neb.

W. R. Gregory, Kansas City, Mo., St. Margaret's Hosp., Kansas City, Kansas.

J. G. Hall, Lyons, Iowa, St. Alexis Hosp., Cleveland, Ohio.

B. C. Hayes, Omaha, Neb., St. Margaret's Hosp., Kansas City, Kansas.

J. J. Hovorka, Dante, S. D., St. Mary's Hosp., Kansas City, Mo.

J. J. Jordan, Jr., Loda, Ill., Mercy Hosp., Davenport, Ia.

T. J. Kargacin, Anaconda, Mont., Mercy Hosp., Co. Bluffs, Ia.

J. L. Kestel, Remsen, Ia., St. Joseph's, Omaha, Neb.

C. E. Knowles, Yuma, Colorado, St. Anthony's Hosp., Denver, Colorado.

H. Van Lammers, Hartington, Neb., U. S. P. H. S.

J. T. Lapierre, Minneapolis, Minn., St. Joseph's Hosp., Omaha.

J. C. Long, Omaha, Neb., Southern Pacific Hosp., San Francisco, California.

G. M. Lynch, Jamestown, Kan., St. Margaret's Hosp., Kansas City, Kansas.

J. J. Malee, Anaconda, Mont., United States Public Health Service.

A. T. Mayer, Omaha, Neb., St. Joseph Hosp., Omaha, Neb.

W. F. McCarthy, Omaha, Neb., St. Margaret's Hosp., Kansas City, Kan.

S. J. McClendon, Omaha, Neb., San Diego County Hosp., San Diego, California.

F. J. McDonough, Salida, Colo., St. Joseph's Hosp., Omaha.

H. J. McLaughlin, Caldwell, Idaho, United States Public Health Service.

J. W. Ortman, Pierz, Minn., St. Joseph's Hosp., Omaha.

W. A. Reichle, Butte, Mont., St. James Hosp., Butte, Mont.

R. T. Rohwer, Schleswig, Iowa, St. Joseph's Hosp., Omaha.

M. J. Ryan, Fort Dodge, Ia., St. Margaret's Hosp., Kansas City, Kansas.

F. A. Spittler, Ewing, Neb., St. Alexis Hosp., Cleveland, Ohio.

R. M. Wallerius, Salina, Kansas., St. Mary's Hosp., Kansas City, Mo.

UNIVERSITY OF NEBRASKA, COLLEGE OF MEDICINE GRADUATES 1924 AND INTERNSHIP ASSIGNMENTS

Allen, James G., Methodist Hospital, Omaha, Nebr.

Anderson, F. R.

Bantin, C. F., University Hospital, Omaha, Nebr.

Benthack, Walter.

Block, D. M., Baptist Memorial Hospital, Memphis, Tenn.

Brown, D. F., Sacramento General Hospital, Sacramento, Calif.

Brown, J. P.

Conrad, P. E., University Hospital, Omaha, Nebr.

Carlson, C. R., Immanuel Hospital, Omaha, Nebr.

Everts, G. S., Cincinnati General Hospital, Cincinnati, Ohio.

Fischer, G. G., U. S. Public Health Service.

Fleishman, Max.

Frank, Chas. H., Jennie Edmundson Hospital, Council Bluffs, Iowa.

Haslam, T. P.

Hoefer, C. A., Methodist Hospital, Omaha, Nebr.

Hughes, D. O., Philadelphia General Hospital, 34th & Pine St., Philadelphia, Penn.

Johnson, Geo. S.

Judd, John H., University Hospital, Omaha, Nebr.

Kenner, W. C., Ancker Hospital, St. Paul, Minn.

Lear, Wm. D., University Hospital, Omaha, Nebr.

Lutton, J. D.

Miller, E. E., Santo Tomas Hospital, Ancon, Panama-Canal Zone.

Moskovitz, J. M., Hebrew Hospital, Baltimore, Maryland.

Mountford, F. A.

Munter, C. W., Baylor Hospital, Dallas, Tex.

Newquist, M. N., University Hospital, Omaha, Nebr.

Oleinik, J. M., Jennie Edmundson Hospital, Council Bluffs, Iowa.

Price, C. R., Elizabeth General Hosp., Elizabeth, N. J.

Reed, P. A., University Hospital (After Dec. 1).

Resnick, J. D.

Scheidegger, E. F., Wise Memorial Hospital, Omaha, Nebr.

Slemmons, T. M., Halstead Hospital, Halstead, Kan.

Slocumb, R. H., Roach Clinic-Midwest, Wyoming.

Smalldon, J. L., Long Island College Hospital, Brooklyn, N. Y.

Stewart, Fletcher, United States Public Health Service.

Trimble, Chester, St. Francis Hospital, Jersey City, N. J. (After Nov. 1).

Turner, J. H., St. Francis Hospital, Wichita, Kan.

Wonders, Max E.

Wood, L. L., Methodist Hospital, Omaha, Nebr.

Woods, O. T., University Hospital Omaha, Nebr.

Mary Bratt, Methodist Hospital, Omaha, Nebr.

Eltson, H. E., University of Minnesota Hosp., Minneapolis, Minn.

Hinkle, W. I., Alameda County Hospital, San Leandro, Calif.

Johnson, Hannah, Methodist Hospital, Omaha, Nebr.

Margolin, M., University Hospital, Omaha, Nebr.
Rozell, Jennie, New England Women's & Children's Hosp., Boston, Mass.

Sealey, H. J., Grasslands Hospital, Valhalla, N. Y.
Stahr, H. S., Kings Park State Hosp., Kings Park, Long Island, N. Y.

HUMAN INTEREST TALES

The new Lincoln City hospital is now under roof. Dr. P. A. Little, has moved from Elba to Brunswick.

Gretna has a new physician in the person of Dr. L. E. Grosskopff.

Dr. James P. Lovely, San Francisco, visited in Omaha last month.

Dr. E. J. Wood, Barneston, underwent an operation lately in a Beatrice hospital.

Dr. and Mrs. G. B. Desparois, Pierce, have gone to the Pacific coast for a vacation.

Dr. W. L. Johnson has moved from Winnebago to Walthill to engage in practice.

Dr. and Mrs. E. L. Bridges, Omaha, have gone to New England for a two months' stay.

Dr. M. E. Kirkpatrick, for several years in practice at Creston, has located at Fullerton.

Drs. J. P. Lord and R. D. Schrock, Omaha, have taken offices in the Aquilla Court building.

Dr. A. C. Stokes, Omaha, announces the removal of his office to the Guarantee Fund Life Building.

Dr. Paul V. Duffy, Cleveland, Ohio, former Omaha, visited his relatives and friends in Omaha recently.

A new welfare organization in Omaha, known as the Optimist club, is headed by Dr. Stuart B. MacDairmid.

A damage suit involving a broken arm and \$26,000 has been instituted against two well-known Beatrice surgeons.

The Methodist hospital, Lincoln, will open July 1st with ten beds. This was the former William Jennings Bryan home.

Dr. W. P. Hodnett, formerly of Scottsbluff, but more recently of Denver, has returned to Scottsbluff to engage in practice.

Dr. and Mrs. H. C. Summey, Omaha, after attending the A. M. A. meeting at Chicago, went to Bangor, Maine, to spend the summer.

Alden Casteel, a Randolph boy, was graduated last month from the Medical Department of Yale university. Dr. Casteel will practice in the east.

Dr. Alfred Schalek, Omaha, gave an address last month before the American Dermatological association, Minneapolis. He also visited the Mayo clinic.

A medical unit to become a part of the 110th Medical Regiment has been organized in Columbus. Two officers and 53 men constitute such a company.

A new office building for the exclusive use of physicians, surgeons and dentists has been formally opened in Hastings. It was built by Dr. E. C. Foote.

Dr. J. B. Fulton, venerable retired Beatrice physician, celebrated his ninety-first birthday June 9. He was a pioneer physician in the Beatrice community.

The honorary degree of Doctor of Laws was conferred on Dr. J. S. Foote, Omaha, histologist and

pathologist, by Creighton University at the recent commencement.

Improvements totalling \$250,000 were made at St. Joseph's hospital, Omaha, during the last year, including a nurses' home, psychopathic ward and new pathological laboratory.

Dr. A. C. Stokes, Omaha, attended the American Life convention at Atlantic City, early in June and presented a paper on the "Effects of Major Surgical Operations on Ultimate Mortality".

Drs. H. B. Lemere, W. P. Wherry, Claude T. Uren, John B. Potts, and John M. Bannister, Omaha, attended the annual meeting of the Triological society at St. Louis the last days of May.

Dr. J. E. M. Thomson, Lincoln, was elected to fellowship in the American Orthopedic association at the Baltimore meeting in May. This is an exclusive organization and is limited to one hundred fellows.

It now reads H. M. McClanahan, A. M., M. D., the former degree having been conferred on our good doctor by the Nebraska State University at the annual commencement. Not many men in the sixth decade of life have worked for a master's degree.

A medical school romance culminated in the marriage, June 5, of George L. Clark, Lincoln, and Mildred L. Johnson, Omaha, both recent graduates of the University of Nebraska College of Medicine. Both will have internships in Boston for the coming year.

Dr. and Mrs. W. F. Callfas have gone east and visited in Baltimore until the Democratic convention met in New York. Dr. Jennie Callfas is democratic national committee woman. Following the convention Dr. and Mrs. Callfas will tour Canada, visiting relatives at Toronto and Waterloo.

Fifteen young women pre-medical students at the state university were entertained by the Medical Women's club and Dr. May L. Flanagan and Dr. Geno Beery, at Green Gables, May 22. A four-course dinner was served in the new dining room of Green Gables sanatorium, a number of addresses were made and each premed was asked to state why she decided to study medicine.

NECROLOGICAL

Dr. J. L. Gandy, Humboldt, Nebr.; Rush Medical College, 1867; one of the first medical practitioners in southeastern Nebraska; at one time located at Table Rock; reputed to have been one of the wealthiest men in that part of the state; died May 21, aged 79. He leaves a widow, one son, Dr. George G. Gandy, Humboldt, and four daughters.

Dr. Robley D. Harris, Omaha; St. Louis College of Physicians and Surgeons, 1880; a hospital steward in the regular army at Ft. Keogh, Mont., under Generals Miles and Custer; private secretary to the late Senator John M. Thurston; appointed register of the land office at Sidney, Nebr., in 1897; a practitioner at Ogalalla and Paxton in the late eighties and early nineties; representative from Keith county 1894-5; died May 23, aged about 75. He had been blind for the last ten years.

Dr. S. S. Weidner, Fairbury, Nebr.; Rush Medical College, 1875; died May 1, aged 75.

Dr. Fred W. Hahn, Omaha; (formerly of Hastings); University of Illinois, College of Medicine; was found dead in his car June 1, with two bullets through his heart, presumably a suicide, age 32.

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CONTENTS

	Pages		Pages
Hemorrhages of the Pregnant Uterus, Palmer Findley, M. D., F. A. C. S.....	289	EDITORIALS—	
Blood Chemistry as an Aid to the General Practitioner, Ralph W. Webster, M. D., Ph. D.....	295	The Average Value of a Physician's Time	326
Biological Action of X-ray, Edward W. Rowe, B. Sc., M. D. F. A. C. R.....	303	Blood Transfusion in Shock	326
Oesophageal Diverticula, W. J. Arrasmith, M. D.	307	The White Blood Cell Count in Acute Abdominal Conditions	327
The Treatment of the Patient with an Ano-Rectal Complaint, Louis E. Moon, M. D.	311	Can 'Baby Contests Be Made More Efficient?	328
A Much Neglected Disease, P. H. Bartholomew, M. D.....	315	Editorial Paragraphs	329
Some Phases of the Ulcer Problem, Frank Conlin, M. D.....	318	"The Poor Boy in Medicine" — For the Last Time	329
Adolescence Glaucoma, D. D. Sanderson, M. D.	322	Well Done, Thou Good and Faithful Servant!	329
Multiple Pregnancy — With Notes on S.x-teen Cases, Arno A. Bald, M. D.....	324	"The Poor Boy in Medicine"—For the Last Time	329
		Former Illinois Doctors.....	331
		Medical Society of the Missouri Valley.....	331
		The Societies	331
		Human Interest Tales.....	332
		Necrological	332
		Books Received	332

HEMORRHAGES OF THE PREGNANT UTERUS*

Palmer Findley, M. D., F. A. C. S., Omaha, Nebraska.

Loss of blood from the pregnant uterus, however small in amount, is always significant and calls for serious consideration.

Many women lose a small amount of blood at intervals in the early weeks of pregnancy and with no ill effects. Indeed this may be true of advanced pregnancy. But it must be borne in mind that while the significance of hemorrhage during pregnancy largely depends upon its severity, a moderate or apparently insignificant loss of blood may be the forerunner of alarming hemorrhages or the expression of a serious morbid condition within the uterus.

We are told that women occasionally menstruate one or more times in their period

of gestation. While I am not prepared to say that this is a fallacy I do not recall seeing a pregnancy in which the loss of blood corresponded in its periodicity and amount to a normal menstrual flow. The endometrium of pregnancy is not known to permit of the escape of menstrual blood. Bearing this in mind one should look with suspicion upon all bleeding from the uterus throughout the period of gestation.

ABORTION: Prior to the beginning of the third month of pregnancy the ovum usually leaves the uterus in its entirety. From the beginning of the third month of gestation there is increasing liability to incomplete abortion. The chorion does not readily separate itself from the uterus from the beginning of the third month to the end of the

*Read before the Annual meeting of the Nebraska State Medical Association, Omaha, May 13-15, 1924.

fourth month. When the chorion fails to separate from the uterus at the time of passage of the ovum it will separate spontaneously in the following days or will require mechanical removal. It is at this time that

a normally situated placenta is responsible for more hemorrhages, both great and small, than all other causes combined. Happily, the loss of blood is usually small and often concealed within the pregnant uterus and does not occasion any serious disturbance to the progress of pregnancy. The separation commonly occurs near term and most often in the first and early part of the second stage of labor.

The cause of hemorrhage is usually ascribed to placenta previa. If you will carefully examine all placentae you will be surprised to note the frequency of old blood clots on the placental surface.



FIG. 1. Normal Attachment of Placenta (Fairbairn). No placenta in cervix or lower uterine segment.

the open (ampullary) layer which forms a natural point of cleavage in the mature placenta, has not developed and the deeply penetrating villi of the chorion hold fast to the uterus. Such is the condition in the third and fourth months of pregnancy. After the fourth month and to the end of pregnancy there is an increasing provision for the separation of the fetal structures of the placenta from the maternal structures and hence an ever decreasing liability to the incomplete emptying of the uterus.

Bleeding ceases when the entire ovum is separated from the uterus even if part of the ovum remains free in the cavity of the uterus. Premature separation of the placenta in the upper segment of the uterus is of much more common occurrence than is generally recognized.

PREMATURE SEPARATION OF THE PLACENTA: It is my belief that partial separation of



FIG. 2. Concealed Accidental Hemorrhage from Separation of Normally Implanted Placenta. (Fairbairn). Placenta completely detached. Escape of blood through cervix prevented by engagement of fetal head.

The older observers believed that trauma was the exciting cause in the vast majority of cases but in the past decade we hear much of the toxemias of pregnancy as causal factors and Polak has recently advanced the theory of torsion of the uterus as an etiological factor. The placenta may separate in part or in its entirety. Where the separation is

central a retroplacental hematoma develops which stimulates contractions of the uterus and the contractions in turn compress the hematoma and bring about a further separation of the placenta. The blood is at first concealed within the uterus but may gradually separate the placenta and its membranes from their attachments to the uterus and permit the escape of the blood through the cervix. Where the presenting head or breech is impacted in the pelvis there may be no apparent loss of blood from the separated placenta until the baby is delivered. Where the amount of blood concealed within the uterus is great, there is a notable increase in the size and tenseness of the uterus—a clinical sign of great value when associated with the usual signs of an acute anaemia. Where the placenta is completely separated active fetal movements and fetal heart tones disappear.



FIG. 3. External Hemorrhage from Accidental Separation of Normally Implanted Placenta. (Fairbairn). Placenta completely detached. Head not engaged and permitting escape of blood through cervix.

In the management of this class of cases we are to be governed by the urgency for operative interference. Where the clinical

findings in no way suggest a considerable loss of blood the membranes should be punctured and small doses of pituitrin administered at intervals of twenty to thirty minutes. A spontaneous delivery with no serious consequences is to be expected. When, however, one is confronted by a tragic case as evidenced by faintness, nausea, rapid feeble pulse, and pallor; associated with a spastic, sensitive uterus; with an absence of fetal heart tones, a cessation of active fetal move-



FIG. 4. A Lateral Placenta Praevia. (Fairbairn). Margin of Placenta overlaps the lower uterine segment.

ments and a rapid increase in the size of the uterus, no time should be lost in instituting heroic measures. A blood transfusion should be followed by an abdominal section. If the uterus presents blood extravasations throughout its walls preference should be given to a Porro operation. If such extravasations do not exist the classical Caesarean section would be the method of choice.

PLACENTA PREVIA: Hemorrhages from a placenta previa seldom occur prior to the seventh month but have been observed in the third and fourth months of gestation. A painless, causeless hemorrhage in the last trimester is all but pathognomonic. The in-

itial loss of blood is usually small in amount, to be followed after a variable interval by a greater and possible fatal hemorrhage. The greater the approximation of the placenta to the lower uterine segment and cervix the earlier and more pronounced the loss of blood although a fatal hemorrhage is not unknown to a marginal implantation in the early stages of labor.

The bleeding from placenta previa in the early months of pregnancy is usually slight but if the loss of blood continues over a long period of time the depression that will ultimately ensue may lead to a fatal issue in labor. It is impossible to foretell how great the loss of blood may be at any recurrence of the bleeding and it is just for this reason that tentative measures are always accompanied by grave uncertainties.



FIG. 5. Partial Placenta Praevia. (Fairbairn). Placenta attached to lower uterine segment and overlaps the internal os.

The mode of production of hemorrhage in placenta previa is explained by the distention of the lower uterine segment, the upward retraction of the fibers of the lower segment of the uterus thereby enlarging the placental site with no corresponding increase in the placental area, and the opening of the

cervix which severs the attachment of the placenta. The persistence of the bleeding is explained by the failure of the lower uterine segment to retract as effectively as is the rule with the uterine musculature in the upper segment of the uterus. Doubtless there are instances when the placenta is prematurely detached by trauma. The low implantation of the placenta renders it more susceptible to trauma than would be the case with the placenta in its normal location.

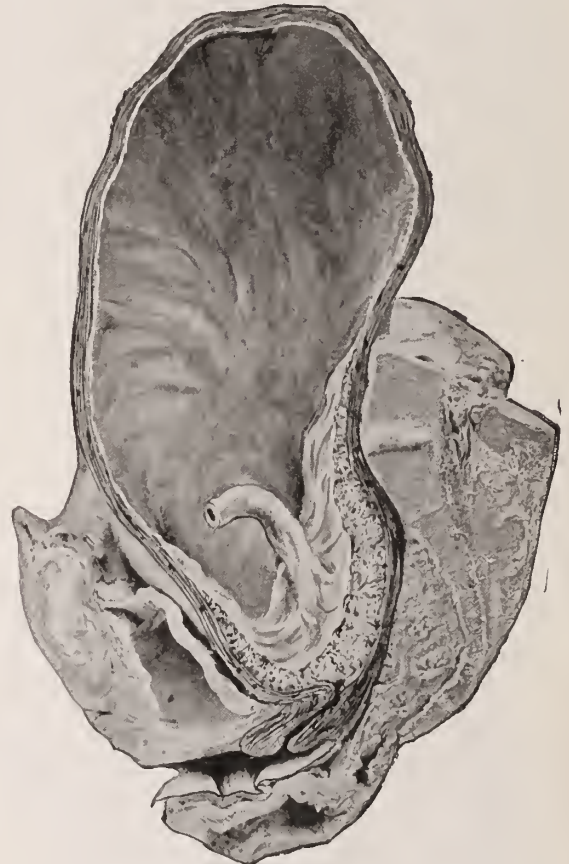


FIG. 6. Complete Placenta Praevia. (Fairbairn). Placenta attached to entire area comprising the lower uterine segment and implanted over the internal os.

A diagnosis of placenta previa calls for immediate interference, first in the interest of the mother, second in the interest of the child provided the pregnancy is advanced to the period of viability. There is no place for watchful expectancy in the management of placenta previa, with the sole exception where the patient is in a hospital under constant supervision and the loss of blood is moderate and not persistent and then only when it is desired to carry the child to the period of viability.

All the various procedures that have been advocated have their respective merits. Time

will not permit of a discussion of their relative values. I am of the opinion that the method of choice for the greatest number of

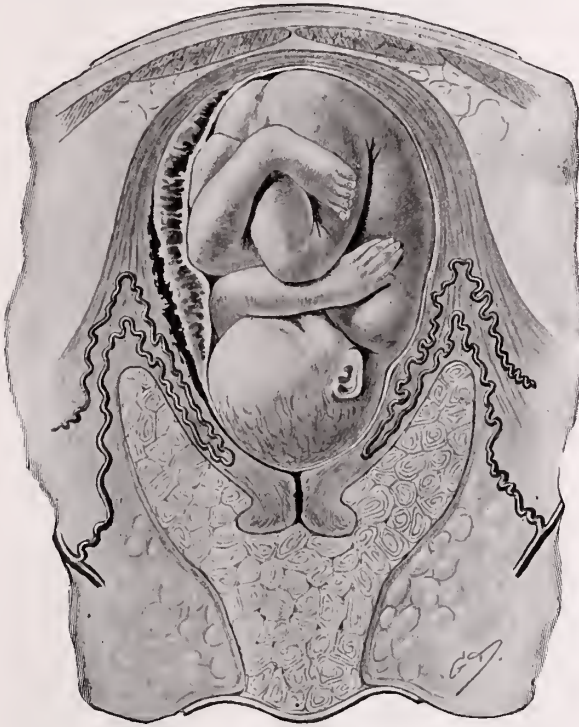


FIG. 7. Compression of Uterine Arteries by Tightly Packing Vagina with Pledgets of Cotton. (Fairbairn). Partial separation of placenta.

cases and under all possible circumstances is the vaginal pack of sterile gauze followed by internal podalic version and manual delivery. If the placenta cannot readily be expressed it should be removed by the hand within the uterus and if bleeding persists from failure of the uterus to contract firmly the uterus should be packed with antiseptic gauze and pituitrin administered together with hypodermoclysis or blood transfusion. The application of the hydrostatic bag in place of the vaginal pack is efficient but not always available. Where the cervix does not dilate and particularly if the mother is a primipara the method of choice is Caesarean Section.

FIBROIDS COMPLICATING PREGNANCY: Uterine fibroids rarely cause hemorrhages from the pregnant uterus. This is so because so-called "bleeding fibroids" seldom permit of pregnancy. Fibroid tumors of the uterus that give rise to hemorrhage are either sub-mucous or are interstitial and of such size as to preclude the possibility of pregnancy in almost all instances. Post partum hemorrhages may result from failure on the part of the uterus to contract or to empty itself of the placenta.

CANCER OF THE PREGNANT UTERUS: Cancer of the uterus is rare in the child bearing age; hence its infrequency as a complication in pregnancy. Furthermore, cancer of the cervix existing in the childbearing age conduces to sterility partly through mechanical obstruction of the cervical canal and partly

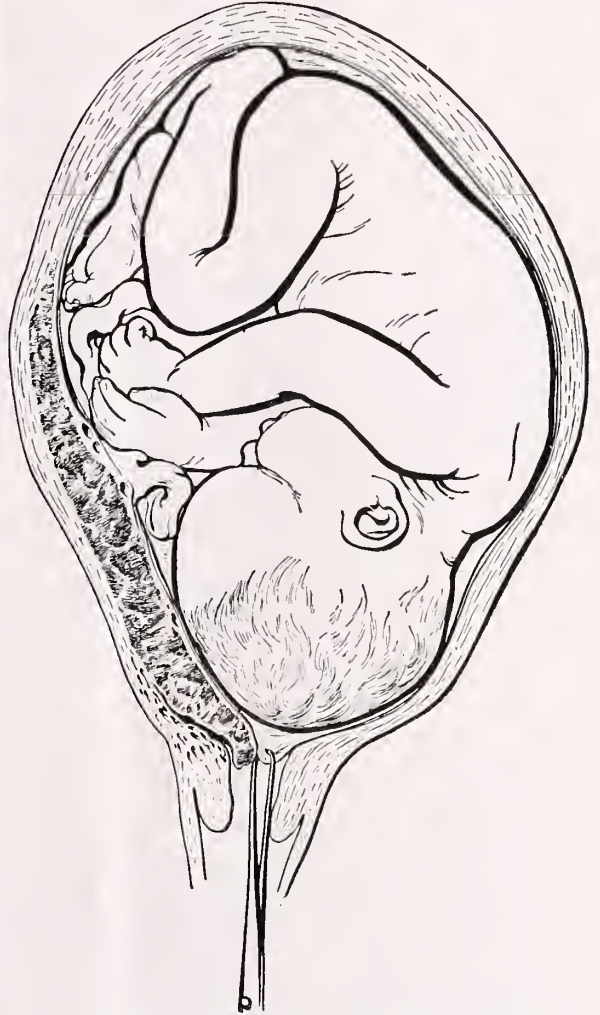


FIG. 8. Rupturing Membranes with Tenaculum Forceps in Partial Placenta Praevia. (Liepmann). This permits the fetal head to engage and compress the detached portion of the placenta.

through the destructive effects of the secretion upon the spermatozoa. Cancer of the body of the uterus would scarcely permit of a resting place for the ovum and seldom occurs prior to the menopause.

In cancer of the cervix the friability of the malignant tissue predisposes to lacerations in labor which not only bleed at the time of labor but continue to bleed thereafter.

—428 Aquila Court.

DISCUSSION

Dr. Ralph Luikart, Omaha: One could not speak other than complementarily of such a well illustrated talk. It is rare we have the opportunity to see a col-

lection of slides thrown on a screen that shows so graphically conditions of this type. I do not know of such a group of pictures in any text or collection of texts.

patient refuses to have anything done and goes through pregnancy with no serious outcome. That is not common, but it does happen.



FIG. 9. The Bag Distended After Its Introduction Into Fetal Sac Making Pressure Against Head and Placenta. (Liepmann).

There were two points in which I was particularly interested. One is in regard to packing with cotton. I know two cases of placenta previa which were packed with gauze and the doctor found the patient had bled to the extent that the patient's life was despaired of, because gauze will not stop bleeding. It acts as a drain.

One point I think Dr. Findley, on account of shortage of time, did not bring out in detail. I refer to the statement that in all these cases of bleeding, the uterus should be emptied at once. I think it is very difficult to be sure of the exact status of the situation. Consequently there are times when bleeding will necessitate the emptying of the uterus, and the bleeding ceases. We hear of more of it than we come in contact with. We hear about this case of pregnancy or that with regular menstrual periods. I have found this patient heard from such a person, and you can't talk to the person who bled or actually saw the patient with the bleeding. The important point is, because of this, the opinions of emptying the uterus differ. I think if the patient is under as close observation in the earlier months as she is in the latter months of pregnancy, the same management would be safe. Occasionally we find a patient bleeding and it is impossible to stop it. The



FIG. 10. Compression of Placenta by Breech and by Leg of Child Which Has Been Brought Through Placenta. (Liepmann).

I want to congratulate Dr. Findley on the excellent demonstration.

FOOT NOTE: I am indebted to D. Appleton and Company of New York, for the accompanying illustrations taken from the monograph on *Complications of Pregnancy* by Edwin P. Davis of Philadelphia.—Palmer Findley.

THE POOR MONKEY

The poor monkey doesn't seem to ever have any kind of a square deal. First they evolved man away from him, and now women are taking his hide for clothes and men are running him bow-legged for his glands.—Fort Worth Star Telegram.

"Success lies in reaching the goal, but it is possible to choose a goal so poor and low that it is not worth reaching."

BLOOD CHEMISTRY AS AN AID TO THE GENERAL PRACTITIONER*

Ralph W. Webster, M. D., Ph. D., Chicago, Ill.

I wish to thank the Nebraska State Medical Association for the honor conferred in asking me to address this meeting and I trust that what I may have to say may prove of some slight interest to the members. I must apologize for choosing, as the subject of a paper to be read before your Society, a topic dealing with laboratory matters, as I am fully aware that such discussions are not usually regarded as appropriate in such meetings. However, my excuse must be that I regard this field as an especially important one at the present time and one which is widely neglected by the general worker under the mistaken assumption that the methods of study involved are too complex and too time-consuming to permit of his personal attention. In the following paper I shall attempt briefly to point out just what the general practitioner may gain from a study of the variations in the amounts of the chemical constituents of the blood under certain pathological influences and, also, to assert that the methods of such study are not more complicated nor more time-consuming than are the many other laboratory details which he has followed out for years in his daily routine.

The blood is, perhaps, the most important tissue in the body, inasmuch as it is at once the purifier and the nutritive source of the cell. Any normal or abnormal product of cellular activity finds its way, ultimately, into the blood stream, either to be taken up by the assimilatory organs or to be thrown out by the excretory ones. This close relationship between absorption and excretion has lead, in times past, to a very close study of the urinary output.

While it is true that the critical study of the urine has been, and still is, of great importance in aiding us to arrive at some conclusions regarding the manner in which the system is handling the material brought to it as food or as to the relative functional activity of such organs as the liver and kidneys, yet such study has not proven of marked significance from the standpoint of diagnosis and, especially, of prognosis. It is, of course, true that the finding of albumin and casts, for instance, in the urine may point to a marked involvement of the kidney, but it is well to remember that, judging from the correlated studies of Cabot and others, albumin and casts may appear in the urine when post-mortem findings show no causative lesions in the kidneys, and, on the other hand, that a marked renal lesion may be found post-mortem in cases in which no albumin or casts appeared in the urine ante-mortem.

This is simply one way of stating the now well-established fact that urinary examinations must be, in any case, simply one of our diagnostic links, being interpreted only in the light of other and, perhaps, more complete clinical examinations. The laboratory worker, unless he is thoroughly familiar with the clinical signs and symptoms of the case in question, is certainly in no position to make positive statements as to diagnosis or prognosis. Such interpretation can and should be made only by the attending physician. The same situation arises in the study of the urine in cases of suspected diabetes. While a mere examination of the urine for sugar may indicate a true diabetes, yet there are frequent cases of glycosuria which are traceable to a somewhat lowered carbohydrate tolerance or to an increased permeability of the kidney to the normal sugar of the blood, and such conditions cannot be satisfactorily followed by the mere determination of the urinary sugar. Even when symptoms of acidosis appear, as shown by an output of acetone, diacetic acid and B-oxybutyric acid along with an increased urinary output of ammonia, one is rarely in a position to make a positive prognosis.

The above statements are made not to detract at all from the value of urinary examinations, as these studies unquestionably have their place in our diagnostic procedures, but to point out that such tests have their distinct limitations, as do most of our laboratory examinations at the present time. It is very true that the early and, possibly, unexpected appearance of abnormal products in the urine may put both patient and physician on their guard as to the possibilities of the development of pathological conditions. As may be attested by almost every physician, urinary abnormalities are often unknown or unsuspected until a subject presents himself for life insurance examination, when albumin or sugar may be revealed, no symptoms of any kind ever having been noted to call attention to the existence of a possible pathological condition. The present movement for the periodic examination of the healthy would seem to be an extremely timely and important one. Any abnormalities found may be purely physiological, yet the attention of the physician is needed to study the case and take measures to prevent, if possible, the fu-

*Read before the Annual meeting of the Nebraska State Medical Association. Omaha, May 14, 1924.

ture ravages of a disease that may be in its incipency or that may develop later.

The blood, under normal conditions, has a more or less constant composition, the organic and inorganic constituents varying within relatively small compass. It is very essential to remember, in this connection, however, that certain physiologic as well as pathologic conditions influence the quantity and quality of the blood. So great are the effects of digestion, exercise, nervous factors, massage, cold, heat, sweats, dysentery, constitutional and specific diseases, that one does not wonder at the possibility of widely varying hematological findings, both as relates to the cellular content and to the chemical constituents of the cells and plasma.

Ultimately, as has been stated, the products of cellular activity will find their way into the blood stream, and, as a corollary, will be excreted by the kidneys and other emunctories up to a certain point. Normally, the kidneys act as the osmo-regulator of the blood, maintaining at a more or less constant level the chemical constituents of the blood. This is, perhaps, more definitely expressed by saying that there is a point in the concentration of each chemical constituent at which the kidneys begin to excrete these blood elements. This is the so-called "threshold of excretion" for the blood constituents, the blood concentration varying for each constituent. Above such normal points, excretion occurs and the amount may be followed in the urinary output, although when the threshold is raised, as it usually is by pathological conditions, the urinary values cease to have any diagnostic meaning. This is the basis of our study of the various nitrogen-containing urinary products, for instance, in attempting to arrive at conclusions relative to the systemic metabolism following a known intake. If the kidneys and other excretory organs are functioning normally, then the constituents of the blood will be excreted until their concentration in the blood is within normal limits. If dysfunction is present, certain of these products will be held back in the blood and, in consequence, the blood concentration will rise in more or less direct ratio to the degree of impairment of function.

From what has preceded it is clear that a study of the variations in the amounts of the chemical constituents of the blood should prove of great value in enabling us to decide not only as to the normal metabolic process-

es but, what is of more importance, in giving us a more or less definite idea as to the existence and extent of the functional impairment of all of the emunctories of the body and extent of formation of the products in question. Certainly such study of the blood concentration offers much more information than does the study of the urinary output, as it shows that the elimination is not able to keep pace with formation in maintaining the constant level of the blood concentration for any specific substance or group of substances and, further, warns us of the possibility of a toxic condition arising or becoming much aggravated.

In times past, it is true, there have been many studies of the chemical constituents of the blood, but little had resulted therefrom owing to the lack of suitable methods of study. It has not been until the last few years that adequate and exact methods have been evolved, which permit a rather exact study of the variations in most of the chemical constituents of the blood under pathological and experimental conditions. It is a pleasure to note that the development and perfection of these methods is due, for the most part, to the work of our American investigators, especial reference being made to Folin and his colleagues, Benedict, Bloor, Myers, Van Slyke, Greenwald, and Kramer.

I shall not weary you with the details of any of these methods of study of the chemical constituents of the blood, as this would probably be of little interest to you at the present moment and, further, because a discussion of such methods would, in itself, consume much more time than is at my disposal. However, I do wish to state that the details and execution of any and all of these methods are comparatively easy to master and that one, who will devote as much time to their study as he found necessary in learning to make proper and exact counts of the red and white cells of the blood, will be able to perform these tests in a thoroughly satisfactory manner. True it is that some knowledge of chemistry and of manipulative procedure is necessary, but this should at least have been learned in our medical courses. In this work it is especially important that the solutions, which one employs in carrying out the tests, be of the highest purity and very accurately standardized. However, our large supply houses now furnish such solutions, so that one need not spend his time in preparing them, simply ordering what he desires just as he would the supplies which he employs in his other laboratory work. As these tests are, for the most part, colorimetric in nature, it is essential that a good colorimeter be at hand, but this need not be of the most expensive type any more than one need employ the most elaborate and expensive hemoglobinometer. The financial outlay for the necessary equipment need hardly be considered, when one regards the value receivable from

the knowledge obtainable. The special value of such tests for the general worker lies in the possibility of following from day to day the changes which occur in the chemical constituents of the blood, a point of much greater importance than is the obtaining of the result of a single test. One would not think of relying upon a single temperature determination in a febrile case. So with these blood tests, it is the study of the course of the changes which is especially valuable. This fact points clearly to the indication for such work being done by the physician himself or by his associate, unless he be in such close touch with the facilities of the larger clinical or hospital laboratories that the work may be carried out in them. However, the physician will rarely take the time or has not the inclination to send his specimens to such reliable institutions for examination. Much better diagnostic and prognostic results would obtain by a closer cooperation between the physician and the clinical laboratory, but, probably, the best results would follow if the physician were in a position to have this work done in his own laboratory at such time as was most convenient for him. "The use of such methods of clinical study will add not only interest but greater accuracy to the work of the physician and enable him with satisfaction to take part in the general advance of clinical knowledge. The large field of clinical chemistry is open to those who are interested in giving to their patients advice founded upon facts rather than fads or fancies."

In the study of the chemical constituents of the blood, little of value has been forthcoming from determinations of the total nitrogen, inasmuch as this factor has a tendency to remain remarkably constant. While the chief nitrogenous elements of the blood, namely the proteins, seem to remain more or less constant, there is, it is true, a not infrequent disturbance of the normal relation of the globulin to the albumin fractions of the protein complex. However, we will not discuss such variations at the present time.

When we speak, today, of variations in the nitrogenous elements of the blood, we have reference to the so-called non-protein nitrogen, namely that nitrogen which remains after all protein material has been removed by precipitation and filtration. Various names have been given to this factor, such as "incoagulable nitrogen", "extractive nitrogen", "filtrate nitrogen", "non-dialyzable nitrogen", "rest", "waste", or "retention nitrogen", but the term non-protein nitrogen is at present employed almost exclusively. This nitrogen factor includes urea, uric acid, creatinin and creatin, ammonia, and amino acids, each of which has a certain importance in our interpretation of the blood findings. Besides these nitrogenous substances, glucose, cholesterol, and the inorganic constituents, especially chlorides, phosphates, and calcium, all show

such variations from the normal under certain pathological conditions, that a close study of their concentration in the blood often proves of special value. I shall not attempt to go into great detail regarding all of these substances, but will discuss rather briefly the more important points to be gained by a study of some of the variations and their significance from the diagnostic and prognostic points of view.

NON-PROTEIN NITROGEN

Although the amount of the non-protein nitrogen of the blood and of the various constituents, which go to make up this factor, are relatively small normally, yet we find that the percentage and absolute relationships between the total non-protein nitrogen, on the one hand, and its various component elements, on the other, are subject to such distinct variations under pathological influences that diagnostic and prognostic deductions may be made with increased certainty. Many figures have been given by various workers for the amount of non-protein nitrogen in the blood, but these depend to a large extent, on the method employed as well as upon the state of digestion at the time the blood is drawn for examination. It has been clearly demonstrated that the non-protein nitrogen of the blood does rise and sink like a tide with reference to absorption from the digestive tract. This "digestive rise" is, of course, not a very great one, being about 4 mg. per 100 cc. of blood, but it is sufficient to necessitate a slightly variable figure for the normal value of the non-protein nitrogen. As generally accepted, at the present time, the normal figure for this factor of the blood is anything below 30 mg. per 100 cc. of blood, the normal non-digestive range being between 22 and 26 mg. per 100 cc. of blood. It is interesting, in this connection, to note that a person on a relatively high protein diet with an abundance of carbohydrate may show a retention of nitrogen as determined by metabolic tests, and yet the figure for the blood may be practically normal, indicating that the nitrogen retained is stored up elsewhere than in the blood. Of further interest is the observation of Morgulis and Edwards that in fasting animals the non-protein nitrogen of the blood usually increases during the early stages of the inanition, remains at a more or less fixed level until the extreme stage is reached, when a new and much greater increase in nitrogen occurs. This

fact must be borne in mind, as one may expect to find such an increase in individuals, who are suffering from inanition as the result of being unable to take or retain food for one reason or another.

As the kidneys are the great regulator of the composition of the blood, maintaining a practically constant level of non-protein nitrogen, it is in disorders of this organ, especially, that most is to be expected from a study of the variations in the non-protein nitrogen of the blood. In the interpretation of an increase in the non-protein nitrogen in nephritis Mosenthal considers that four factors must be regarded: (1) Retention of nitrogen by an insufficient kidney; (2) inspissation of blood due to loss of water; (3) increase of protein catabolism; and (4) the chemical combination in which the non-protein nitrogen exists in the blood. In cases of high fever, associated with marked toxogenic decomposition of protein, it might be rational to suppose that these decomposition products would find their way into the blood current and increase in the non-protein nitrogen of the blood. As a matter of fact, we do find in pneumonia a considerable increase, as a rule, reaching its maximum toward the crisis but bearing no relation to the time at which resolution takes place. In very few of the other fevers, however, has a rise of any importance been noted.

Numerous workers have shown that, in the majority of cases, the non-protein nitrogen increases with an increasingly severe nephritis. In many cases of nephritis, however, the non-protein nitrogen as well as the urea fall within normal limits. It is probably true that, in both chronic interstitial and chronic parenchymatous nephritis, cases without symptoms of uremia show normal or only moderately elevated values. It is in just this type of case that the repeated examinations of the blood will prove of value as indicating, by an increasing non-protein nitrogen value, the approach of or the tendency to an attack of uremia. In cases showing considerable hypertension, the non-protein nitrogen may not be much increased or may be markedly elevated, especially if this hypertension be due to a renal disturbance. In cases tending toward uremia or showing actual uremia, the values are markedly increased, reaching in some cases as high as 350 mg. per 100 cc. of blood. Amounts of 100 mg. or over per 100 cc. of blood are rarely seen in conditions oth-

er than uremia, so that this factor assumes great importance in diagnosis. Further, the prognostic value of this examination is shown in the fact that patients with high non-protein nitrogen do not, as a rule, survive for a very long period. Another valuable point in the study of this factor is that it furnishes a guide to the proper diet to be allowed nephritics, as cases with high retention require restriction of protein. In chronic passive congestion of the kidneys, there is little or no retention, while in chronic lead poisoning, which is so often associated with granular kidneys, considerable retention may be observed, but the figures here never reach those shown in uremic states. In the eclampsias of pregnancy we seldom find a marked increase in the non-protein nitrogen, at least so far as we may judge from reports. This relatively slight retention in obscure pregnancy serves as a point in differential diagnosis from uremia.

UREA

In a general way it is to be expected that variations in the amount of urea nitrogen will parallel those of the total non-protein nitrogen. Normally, the urea nitrogen is maintained by the selective activity of the kidney at about 50% or slightly less of the total non-protein nitrogen, so that the normal values for the urea nitrogen may be taken as from 11 to 15 mg. per 100 cc. of blood. As the urea is excreted largely through the kidneys, impairment of renal function, even of slight degree, may be associated with a retention of urea in the blood, while in advanced disturbances of renal activity the urea nitrogen may constitute 75% or higher of the total non-protein nitrogen. A rather marked increase of urea nitrogen in the blood is to be expected in either acute or chronic suppression of the kidney function, being especially noteworthy in the nephritis associated with poisoning with such heavy metals as mercury, arsenic and lead. As a matter of fact, it has been found that in severe nephritis, accompanied by symptoms of uremia, retention of urea is marked, reaching in some cases as high as 250 mg. of urea nitrogen per 100 cc. of blood. It is evident, therefore, that a considerable retention of urea is a positive indication of a more or less complete renal insufficiency. In the chronic types of diffuse or interstitial nephritis this retention may be less marked than in the acute forms or in those that are tending toward uremia, just

so long as the patient is living within the functional capacity of his kidneys, the figures here ranging from 25 to 50 mg. per 100 cc. of blood. A large part of the kidney parenchyma may be pathological and yet little retention of urea occur, providing the remaining renal tissue is sufficient to take care of the ordinary systemic requirements. Should, however, the urea nitrogen show a gradual increase and become marked, uremia is impending owing to the excessive work put upon the remaining functioning renal cells. Chronic passive congestion of the kidney almost never shows any appreciable urea retention. There are, it is true, certain conditions in which we may find a relatively high urea nitrogen and which cases are not, directly, renal in origin, although certain associated renal disturbances must, probably, be held accountable for the abnormal blood findings. Thus, it is not rare to find somewhat high figures in cases of arterio-sclerosis, malignancy, intestinal obstruction and pneumonia. In uncomplicated cases of prostatic obstruction, the blood findings are not much above normal, but any appreciable rise of urea nitrogen, above 35 or 40 mg. per 100 cc. of blood for instance, should put the surgeon on his guard as to the possibility of his patient being a bad operative risk.

As the liver is concerned to a considerable extent with the formation of urea, we might expect to find in cases of marked hepatic insufficiency a reduction in the amount of urea in the blood, just as we do in the urine in such conditions as acute yellow atrophy and phosphorous poisoning. However, it is to be recalled that the liver is not wholly responsible for the conversion of ammonium salts and amino acids into urea, so that it must be regarded as possible that a practically normal urea blood finding may obtain. Recent work by Farr and Krumbhaar seems to indicate that the urea nitrogen of the blood is actually not diminished in hepatic disease, although various French workers believe that it is.

I shall not take the time to discuss the status of the Ambard constant or coefficient, of McLean's "Index of Urea Excretion" or of the efforts of Austin, Stillman, and Van Slyke to derive a formula which may express correctly the various factors having to do with the excretion of urea and with its concentration in the blood. While these points have a certain value, in the study of the renal function and, also, in the giving of a prognosis in any special case, yet the general worker is not in a position to give the necessary amount of attention to details to warrant his use of these various formulae.

URIC ACID

There is more or less discussion at the present time relative to the form in which uric acid exists in the blood, but this controversy need have little part in our presentation. That uric acid is constantly found in the blood in appreciable amounts is an established fact, although the figures taken as normal have been subject to some fluctuation. At present it is probable that the normal value for the blood uric acid may be taken as from 3 to 4 mg. per 100 cc. of blood. Denis has shown that in normal men no increase in the circulating uric acid is produced by the ingestion of large quantities of purins. In persons suffering from renal insufficiency a more or less marked increase in the uric acid content of the blood is produced by high purin feeding, although in gout the rise is not as great as might be expected, judging from the latest researches of Folin. It would seem that the normal kidney reacts towards an excess of uric acid in the blood in a way essentially similar to that in which it conducts itself towards an excess of urea and is able to excrete the excess of uric acid, thereby keeping the circulating uric acid at the same level as that noted when only endogenous uric acid is to be excreted. According to Folin we may have four classes of blood with reference to the uric acid content: (1) Blood in which both uric acid and non-protein nitrogen are present in normal amounts; (2) blood in which with normal amount of uric acid we have greatly increased amount of non-protein nitrogen; (3) blood giving abnormally high uric acid values with normal amounts of non-protein nitrogen; and (4) blood in which abnormally large amounts of both uric acid and non-protein nitrogen are present.

High blood uric acid values are dependent either upon an increased formation or a decreased elimination. Thus, in leukemia we find a high uric acid value due to increased formation, but in most other conditions the elimination must be regarded as at fault. In cases of severe nephritis, in which the eliminatory power of the kidney is greatly reduced, we find that the uric acid values of the blood reach their highest levels, in one case reported by Myers and Fine being 27 mg. per 100 cc. of blood. These workers point out that the kidneys, under normal conditions, concentrate the uric acid only about 20 times while it concentrates the urea 80 times. Upham and Highley show that in cases showing clinical signs of nephritis the concentra-

tion power for uric acid is 14 or below. Further, in this connection, it is to be recalled that Myers, Fine and Lough have called attention to the fact that very high values for the blood uric acid may be noted, not only in cases of advanced interstitial nephritis but, also, in the very early stages of the disease before a retention of urea has been observed. They state that, when symptoms of gout are absent, a high blood uric acid is a valuable early diagnostic sign of nephritis, possibly earlier evidence of renal impairment of an interstitial type than the classic tests of proteinuria and cylindruria, a finding that has been confirmed by many workers in this field. Apparently the parenchymatous type of nephritis does not share in this diagnostic increase of uric acid in the blood. However, in the interstitial type we note such increases as 5 to 8 mg. per 100 cc. of blood, while in the chronic forms the range may run from 12 to 27 or possibly higher, keeping pace with the increase in non-protein nitrogen and urea nitrogen. Besides the increase of uric acid in nephritis, it is not unusual to find a relative increase in such conditions, as pneumonia, carcinoma, severe febrile conditions, arterial hypertension, and in such poisonings as those with mercury and lead. It is, of course, possible that in all these latter conditions there may be an associated renal factor that may be accountable for the retention of uric acid in the blood, although increased nuclein decomposition and consequent increased formation of uric acid may be in part responsible for the increase in some of these diseases.

For some time following the teaching of Garrod, an accumulation of uric acid in the blood was held to be pathognomonic of gout. That this idea is erroneous is seen from the list of conditions in which an increase of uric acid is observed. The usual range of the blood uric acid in gout is from 5 to 10 mg. per 100 cc. of blood, there being no associated increase in the non-protein nitrogen or urea. This fact points to the essential examinations which must be made of the blood, if any differential diagnosis is to be made. The uric acid, alone and of itself, is of little value and must be correlated with the figures for the non-protein nitrogen and urea. In the non-gouty arthritides the blood is not infrequently high in uric acid, but most cases have a somewhat high non-protein nitrogen, while in gout there is no increase in this latter factor although the uric acid values are high.

CREATININ

Only within the last few years has the importance of a study of the variations in the creatinin content of the blood been recognized. Behre and Benedict seem to be convinced that creatinin, as such, does not exist in detectable quantities in the blood, but that creatin is constantly present in appreciable amounts. However, it is generally conceded that there is a certain normal value for the preformed creatinin of 1 to 2 mg. per 100 cc. of blood, while the total creatinin (that is, the preformed creatinin plus creatin) is about 6 mg. From the distribution of the non-protein nitrogenous compounds in the blood and urine, it would appear that of the three constituents usually estimated, creatinin is normally the most readily and uric acid the least readily eliminated, with urea standing in an intermediate position. It seems reasonable to conclude that when a noticeable retention of creatinin has occurred, the functional condition of the kidney has been markedly impaired. In other words, a retention of creatinin is an indication of an advanced stage of the nephritis, while an increase in the uric acid content of the blood points to an early change in the kidney. The study of the variations in the creatinin content of the blood would seem to have the following bearing on prognosis: Figures over 3.5 mg. per 100 cc. of blood may be viewed with grave concern, while values over 5 mg. are almost invariably indicative of an early fatal termination. There are, it is true, such exceptions where the retention may be due to acute renal disturbances, as shown in acute nephritis and mild mercury poisoning. As Myers has said, "Apparently the kidney is never able to overcome the handicap of a high creatinin accumulation. It would seem that creatinin being almost exclusively of endogenous origin, furnishes a most satisfactory criterion as to the deficiency in the excretory power of the kidneys and a most reliable means of following the terminal course of the disease, though it should be noted that urea, being largely of exogenous origin, is more readily influenced by dietary changes, and, therefore, constitutes a more sensitive index of the response to treatment."

SUGAR

The occurrence of glucose in the blood is termed glycemia. Under normal conditions, the amount of glucose found in the blood ranges from 0.08 to 0.1 gram per 100 per cc.

of blood, while under pathological influences these values may fall to 0.04 or 0.06 gram per 100 cc. of blood or, what is more usual, rise to as high as 1.1 gram per 100 cc. of blood, as reported by Myers and Bailey. Whether or not variations in the blood sugar will be accompanied by a glycosuria will depend upon the permeability of the kidney for glucose at any stated period. The point at which the kidney begins to secrete sugar from the blood is known as the "renal threshold" for sugar and may be taken as a blood concentration of 0.15 to 0.17 gram of sugar per 100 cc. of blood, the appearance of sugar in the urine being apparently dependent, to a great extent, on the coincident appearance of diuresis. When this threshold has been reached or passed, the output of sugar in the urine may continue until the concentration in the blood has fallen nearly to the normal limits. In the mild cases of diabetes we may find a normal threshold for sugar, although even some severe cases may show a somewhat lowered threshold. However, as the disease progresses, we note that the threshold gradually rises, so that we frequently find such cases associated with a marked hyperglycemia and only a slight glycosuria, due probably to a coincident nephritis which is usually found. In patients with a normal threshold of 0.15 to 0.17 mg. of sugar per 100 cc. of blood and possibly no sugar in the urine, it is, perhaps, wise to remember the possibility that an early diabetic state may be present, as the blood concentration should be maintained at a somewhat lowered level.

If we except the glycosuria produced by phlorizin and the somewhat similar condition of "renal diabetes", in which states the glycosuria is due to an excessive permeability of the kidney for the normal blood sugar, all forms of glycosuria must be regarded as accompanied by a hyperglycemia. This latter condition is, therefore, of more fundamental importance than a glycosuria, as by it we are able to arrive at a differential diagnosis of the existing state and to make a much closer prognosis. "Glycosuria is evidently only a safety factor, and the internist in applying his dietetic treatment should endeavor primarily to relieve the hyperglycemia; although in so doing he relieves the glycosuria, he should be finally guided by the concentration of sugar in the blood. In the early stages of the disease the glycosuria is an excellent index of the hyperglycemia, but when the

threshold point has been raised, as for example in diabetes associated with chronic kidney disease, the disappearance of sugar in the urine is a rather poor guide to the glycemia." As Williams and Humphreys state: "Our experience has led us to the conclusion that it is desirable to maintain the blood sugar level as nearly normal as possible even though severe restrictions in diet may be necessary for the purpose, notwithstanding the fact that in most cases the high threshold will permit of a much more liberal diet without the appearance of sugar in the urine."

For individuals who show a lowered ability to metabolize the carbohydrates of the diet as manifested by a glycosuria, it is necessary to determine their capacity of handling carbohydrates by the glucose tolerance test. This consists in determining the sugar content of the blood in the fasting state, that is before breakfast, a specimen of urine being taken for examination at the same time. The patient is then given 100 grams of glucose in about 300 cc. of water flavored with a little lemon juice. Specimens of blood are then drawn at the end of one, two, and three hours and samples of urine are collected at the same intervals. Estimations of the sugar in both blood and urine are then made and the figures plotted in the form of a curve. With the normal individual, the blood sugar is increased during the first hour, reaching its maximum in that period and falling again to the normal level within the two hour period. In the pre-diabetic cases, the rise in blood sugar is, also, most marked at the end of the first hour, but approaches the normal level within three hours or even longer. In the true diabetic state, the rise of the blood sugar is more slowly noted, the maximum being usually reached within two hours and being maintained for several hours thereafter, the normal point not being reached for 5 to 8 hours. The urine will, of course, show sugar in all cases of diabetes, but with the majority of normal individuals little or no sugar will be found in the urine after this intake of 100 grams of glucose. At least the normal person will show only a transient glycosuria, while the diabetic will continue his glycosuria for many hours. In "renal diabetes" the blood sugar may remain within the limits which are only slightly above the normal, although a prompt and even marked glycosuria will obtain.

From what has preceded it is evident that the study of the glucose content of the blood,

that is of the hyperglycemia, is of much greater importance than is the following of a glycosuria, as the latter gives very little information as to the real status of the condition under investigation. While a hyperglycemia is much more common in the conditions usually studied, it must not be forgotten that there are certain diseases which are associated with a hypoglycemia, among them being such hypoendocrine disturbances as myxedema, Addison's disease, cretinism, and pituitary disorders. This hypoglycemia is not to be regarded, in itself, as diagnostic of these conditions, although it is most certainly one of the diagnostic links in the chain of evidence.

In these days, when the successful treatment of many cases of diabetes rests so much on the proper balancing of the dosage of insulin against the diet of the patient, it is most important to remember that the main thing to avoid in the use of this most valuable therapeutic agent is the production of a hypoglycemia. In this treatment the close and intelligent cooperation of the patient is essential, insofar as he should be made familiar with the premonitory symptoms of a beginning hypoglycemic state and should immediately communicate the warning to his physician. These early symptoms may be summarized as follows: Sudden and pronounced hunger; sudden weakness and fatigue; a feeling of restlessness; a sudden pallor or, even, flushing of the face; and an increased pulse rate, which is of especial diagnostic value in children. These early symptoms usually appear within 1 to 5 hours following the injection of insulin and may be treated by the immediate administration of a little carbohydrate food, such as a couple of lumps of sugar or half a glass of milk. If this early condition is not corrected, the reaction may be progressive and even lead to very serious consequences. Under these latter conditions, some or all of the following symptoms will be noted, as an indication of the serious nature of the hypoglycemia: Sweating, which is especially characteristic; tremor; fear and great restlessness; vertigo; diplopia; aphasia, delirium, etc.; convulsions; low blood pressure; collapse; unconsciousness; and, finally, death. It becomes evident, therefore, that the physician must be in a position to know the state of his patient's blood as to its sugar content, if he wishes to follow intelligently the treatment of his cases with insulin. Of course, he may wait till the

above-enumerated symptoms appear and then resort to administration of carbohydrates in the hope that he may control affairs, but it is much more rational and even easier for him to follow his case with repeated examinations of the blood for its sugar content and then control his diet and dosage of insulin accordingly. We can hope for little information from an examination of the urine for sugar, as the threshold may be so high that a glycosuria can not obtain, or the threshold may be nearly normal and the blood content be below normal. Neither of these conditions can be shown by an examination of the urine. What I am trying to say, in this connection, is that the successful handling of our cases of diabetes today demands frequent blood sugar determinations and such examinations the physician should be in a position to perform for himself, or, at least, have performed in his own laboratory at such intervals as he feels to be necessary.

I have already consumed the time allotted me, so that I can not take up a discussion of many of the very important aids to be derived from the study of the chemical constituents of the blood. I must pass over the value of the chloride determinations, the importance of the estimation of the cholesterol in suspected cases of cholelithiasis, the study of the lowered calcium content of the blood in such conditions as rickets, tetany, nephritis, tuberculosis, hay fever, hyperesthetic rhinitis, bronchial asthma, etc., and the enormous field of study found in the determination of the hydrogen-ion concentration of the blood in various conditions associated with acidosis, as well as the invaluable estimation of the CO_2 capacity of the plasma in such states. All of these studies will yield to the general worker much information, which will prove of much moment to him in the proper handling of his various cases.

If I have been able to point out that a study of the variations in the chemical constituents of the blood should have a fixed place in the daily routine of the physician and that it is "up to him" to see to it that he devotes more attention to such important fields, which he is now allowing to lie uncultivated, my time will have been well spent. Certain it is that much better diagnostic and prognostic work will be done by us all if we will spend a little more time in finding out just what may be gained by these studies of the chemistry of the blood and then devoting our energies to a more frequent performance of these tests.

BIOLOGICAL ACTION OF X-RAY

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The application of roentgen rays to medical science is recent. The development of the specialty, roentgenology, has taken place in less than a score of years. Short wave-length therapy is still the topic of greatest interest to roentgenologists. Dr. Duane, Professor of Biophysics, Harvard University, in his recent Caldwell lecture said, " . . . the x-ray expert today possesses one of the most important and far reaching methods of diagnosis in existence. Owing to the increase in accuracy of estimating dosage, he now possesses, also, a method of treating certain types of disease that is not excelled in precision of measurement in any other branch of medicine or surgery."

It is of interest to know how shortly after the war, rumors came from Central Europe of wonderful cures by a new method of roentgen treatment. German physicians were employing unheard of doses and were employing short wave-length radiation not produced heretofore. Due to our late unpleasantness with the German Empire, and our disillusionment of the greatness of some of their accomplishments, skepticism was shown in America. A number of our prominent experts slipped across the sea and observed the Clinics in Europe. After making due allowance for difference in methods of measurement, it was certain that the German workers were using higher voltages and shorter wave-length radiation. They were bolder in the application and had accumulated a great deal of biological research. A real advance had been made in therapy.

This knowledge has been brought to America, with the result that American money and American research has made more advance in equipment and the knowledge of short wave-length radiation than any other field of medical interest. Equipment and its use has far out-run physical and biological research. Among our own men the names of Coolidge, Duane, Shearer, Bovee, Loeb, and Francis Carter Wood, have grown familiar. Abroad there are—Christian in Scandinavia; Ledoux-Labard, Becere, Reynaud, Nagier in France; Kroenig, Dessauer, Friedrich, Seitz and Wintz in Germany.

SPECIAL ISSUE

Because of certain criticism that is never fully met in all scientific endeavor, a searching study was made of the real effects of

x-ray on the human tissue. It was an effort to determine how much of our hope was founded on our own ambition to make good, and how much was founded on real fact. In other words, have we been fooling ourselves with a vain thought that a great field had opened, built up on physical and biological research.

In the first place, the action of roentgen rays and radium rays on malignant cells are the same, provided that the wave-lengths are equal. A noted surgeon has said that so far as the therapeutic effects of radium are concerned, we would live to see radium but a curiosity on the museum shelves or in the laboratory for study. There is and always will be a limited field for the therapeutic use of radium. It is especially adapted for cavities of the body and where irradiation is most effective by having it placed in direct contact to the tumor. Radium is not a competitor of roentgen ray, but is an adjunct. Drs. Gaylord and K. Wilhelm Stenstrom, of the New York State Institute for the study of malignant disease, say "In considering the relative advantages of radium and x-ray for external radiation, it must be remembered that to compete quantitatively with the present x-ray equipment, huge amounts of radium would be required, the cost of which would be prohibitive. The difficulty of obtaining adequate protection from such large amounts, even if available, would constitute an insurmountable obstacle. Moderate amounts of radium in properly arranged packs will in some instances be found to meet special conditions better than x-rays, but these occasions are few."

The biological unit dose is the so-called erythema skin dose. If roentgen rays are applied to the human skin and the skin surface in fourteen to twenty-eight days exhibits an erythema, we have an erythema dose. Using the same quality and quantity of roentgen rays we can reproduce this erythema at will. Various opinions might be expressed as to just when the erythema is of a standard type. This variation from a light blushing of the skin to a decided redness makes it necessary to have a more accurate standardizing method. This is possible by the use of the iontoquantimeter. The perfection of this instrument has been recent. Every laboratory where short wave-length therapy is em-

ployed depends upon it. It is not feasible to use it upon every patient, nor is it possible to place it at the depth where the effects of the roentgen rays are maximum. It is customary to first test out the machine, standardizing set-ups for various combinations of distance, voltage, time, ampere, filters and size of field, and then with a water phantom obtain the surface dose on whatever depth is required. These set-ups, properly checked at regular intervals, will make it possible to reproduce at will whatever quantity or quality of roentgen ray is desired. The iontoquantimeter is not an instrument which can be used by every physician. Unless the physician is skilled in its use, the services of a trained physicist are necessary to make accurate use of it.

Elaborate charts have been prepared showing the isodoses or effective wave-length radiation at every possible depth. Dessauer, Sietz and Wintz have elaborated their findings graphically so that they can be fitted to any cross section of the human body. Accurate measurements of every patient is first made. Anatomical cross sections will help to construct on these charts an actual working plan for every patient. This is placed on the chart and the proper dose calculated.

Let us now take up the Biological effects of roentgen rays on the tissue of the body. Let us see how much is known, and how much has stood the acid tests of research.

BIOLOGICAL EFFECTS

1. The factors which determine the degree of sensitiveness of living matter to radiation are:

(a) Actively dividing cells are considered more sensitive than resting cells and tissues.

(b) Cells or tissues consisting of simple protoplasmic material in which a nucleus is embedded are more sensitive than cells which are embedded in a large amount of transformed cell protoplasm, or in products of cell secretion, fibers and paraplasmic material in general.

(c) Resting cells are very resisting, especially if they have been dehydrated.

(d) Tissues more resistant to all kinds of injury are likewise more resistant to radiation.

2. Radiation affects cytoplasm as well as the nucleus, but interference with the nucleus is usually of greater significance than localized changes in the cytoplasm. The

nucleus is more easily affected. It may be solely affected.

3. The most delicate functions of the cells are affected first and the coarser functions last. (Details see Loeb).

4. According to the intensity of radiation one may further grade the action of the rays. In some cases a period of stimulation is followed by death. Severe injuries may become apparent after a latent period. A period of retardation may be followed by a period of acceleration. All degrees of retardation of growth are possible. Conditions intermediate between cell death and growth may persist, but this is usually not for long and either cell death occurs or the tissue regains full growth.

5. These graded effects are not peculiar to roentgen rays but are the same as found in the experiments with the action of heat.

6. The intensity of radiation which is required for graded effects varies with the sensitiveness of cells.

7. A latent period separates the time of application of the rays and that of the appearance of the first manifest consequences—stimulation or depression. The duration of the latent period varies inversely with the intensity of radiation. A latent period may be absent in case the intensity of the radiation is very great.

8. The effect of the various kinds of rays does not differ in a way corresponding with their fundamental physical differences. The character of stimulation and injury depends on the character of the living system which they affect, more than on the character of the rays. The quantity of the radiation, of course, is the factor, other things being equal.

9. Through repeated radiations an immunization of tissues against the effect of radiation can take place. This is especially observed in Leukemia, and tumors. This may depend on new cells forming which are more resistant than the old ones. This immunity is probably an acquired one.

10. All these points apply to cancer as well as tissues in general, but cancers are particularly vulnerable for several reasons.

(a) Cancer cells are dividing rapidly.

(b) They are often dividing irregularly.

(c) The rapid multiplication of cells tends to outgrow its paraplasmic or protective cells.

A summation of internal unfavorable ef-

fects and of the effects of radiation takes place which makes them more vulnerable than normal tissues. The cells die first which are in the most unfavorable position, usually those in the center of the tumor. Otherwise the vulnerability of cancer cells depends on the tissue from which it arises. The lympho-sarcoma and the lymphocytes are very sensitive to radiation. The simple baso-cellular carcinoma is more sensitive than the more differentiated keratinizing squamous cell carcinoma. The fibrosarcoma, much richer in paraplasmic structures, is more resistant than the round cell sarcoma which is poor in fibrillar substance.

The effect of radiation on tumors is primarily a direct one, acting on the tumor cells themselves. Only secondarily do the ingrowth of connective tissue and increased fibrosis come into play. There are certain indirect effects which may be of advantage in the destruction of cancer cells. Soft rays stimulate phagocytosis. Thus the immunity against cancer may be increased by the increase of lymphocytes. This influence may be weak or absent. Furthermore, the influence of radiation on the body fluids may affect the growth. Thus it has been observed that states of cachexia or intoxication following radiation may influence unfavorably the means of defense of a rayed individual against tumor growth.

The toxemia following radiation with a large dose of penetrating rays likewise represents an indirect effect. It has been interpreted as due to the autolytic solution of tissues under the influence of radiation (Edsall and Pemberton).

Long continued stimulating action of roentgen ray on previously normal tissues may convert this tissue into cancerous tissue, carcinoma or sarcoma. This transformation represents, in all probability, another instance of the stimulating effect of radiation on the growth processes in tissues.

The study of the action of roentgen rays on chemical reactions, forms of animal life, developing forms, seeds and plants, bacteria and the various tissues of the body (as skin, blood, blood vessels, spleen, thymus, thyroid, digestive tract, glands, nervous system, eye, muscle, cartilage and connective tissue, generative system, etc.) has been carefully carried out by Russ and Colwell and many others. A discussion of these changes will take

us far afield. In therapeutics short wavelength radiation is employed chiefly for malignant diseases. The action of such tissues under this form of radiation may be briefly considered.

The researches of Clunet and Roulet La-pointe on the squamous celled carcinoma of the malpighian type in the human subject show how the cells react to the short wavelength radiation. Keep in mind that the normal tissue reacts in three ways, depending on the amount of radiation. First there is stimulation, next inhibition, and finally death of the cells. The skin is very resistant. The softer and more recent the type of tissue, the more easily is it affected by the ray. The Germans like to speak of a dose that is lethal to the various types of cells. If the normal skin dose is just under one hundred per cent, lymphatic tissue will perish at thirty per cent; ovarian or testicular tissue at thirty-five; muscle at sixty-five; sarcoma at eighty; carcinoma, depending on the type, from ninety to one hundred thirty.

Before the ultimate disappearance of the cells of the squamous carcinoma they pass through at least five successive phases.

1. The latent phase varies from six to fifteen days and during this time no cytological changes are to be seen. Its duration is rather shorter for carcinomata of the spino-cellular type, than for the baso-cellular.

2. The development of monstrous characters is marked by an enlargement of all parts of the cells, which may be increased in diameter as much as two or three times; an increased number of atypical mitoses; the appearance of enlarged nuclei, markedly chromophile; the appearance within the cells of forms having a pseudo parasitic character.

3. Keratinisation may be either disseminated, total or atypical. When disseminated, each cell undergoes keratinisation independently of its neighbor, in contrast to those effects appearing to influence all cells alike. When atypical keratinisation is observed, the protoplasm becomes granular, and finally eosinophile; these granules gradually fuse together into one mass of keratin—the nucleus is subject to an evolution which varies with the particular case; sometimes there is karyorrhexis, then diffusion into the protoplasm; sometimes the nucleus becomes clear and acidophile granulation appears in it and a transformation into a mass of keratin follows. Nuclear keratinisation may, however,

occur without the pycnotic stage; the process then appears to begin in the nucleolus, and in some cells this seems to precede the transformation occurring in the other parts of the cells.

4. Disintegration and phagocytosis. The disintegration of the degenerating cells appears to be caused mainly by the polynuclear cells and the fibroblasts of the stroma, which are in an active condition. Macrophages and plasma cells appear at the latter stage and accumulate around the vessels, remaining in the vicinity long after the disappearance of the malignant cells. At the periphery of the keratinised masses plasmodia are sometimes found simulating the type presented by the cells of the neoplasm, but they are rarely found in great numbers. The masses of degenerate cells, before becoming entirely destroyed, may cease to give the color reactions of keratin, and remain encapsulated in the dermis for prolonged periods.

5. Formation of scar tissue. As a general rule this is not brought about by the formation of fibrous masses, but the tissues assume the structure of healthy skin, except for the absence of hair and of glands; the elastic fibers are also less numerous and more attenuated than they are normally. No neoplastic masses are to be found in these supple scars, which appear to be quite healthy, on the other hand, at a depth below the skin cells may be found acted upon but not destroyed. Such cells remain in a latent condition and if treatment is not continued, they give rise to recurrences.

Apart from their cytological interest, these five phases serve as a most useful guide in estimating the stage that the calls of a neoplasm have reached in the evolution which terminates in their extinction. Practically all malignant cells pass through these phases which may be summarized by saying: The action of the rays after a latent period causes complex physiochemical change in the cell, it becomes edematous, the nuclear substance fragments, and finally loses all power of regeneration. The debris is finally removed by phagocytosis and replaced by connective tissue.

CONCLUSIONS

That we have in short wave-length therapy a valuable agent for the successful treatment of many kinds of malignancy, there can be no doubt. If it were employed solely for the alleviation of suffering, this alone would

justify its employment. But, it has cured cancer and in conjunction with surgery the mortality rates from cancer if early diagnosed are materially reduced. Radiation is not a substitute for surgery. In only a few malignant conditions does it promise alone as much as can be accomplished by the combined use of surgery and radiation.

Personally, I do not feel we are presuming a rainbow of promise. There has been a real contribution to medical science. With biophysical research leading the way, we will have our feet on solid ground.

BIBLIOGRAPHY

1. Hirsch, I. Seth, M. D. "Principles and Practice of Roentgen Technique."
2. Colwell and Russ. "Radium, X-rays and The Living Cell."
3. Wood, Francis Carter, M. D. "Further Studies in Radiation Dose." *Jour. of Radiology*, Vol. IV, No. 10, p. 343.
4. Duane, William, Prof. of Biophysics, Harvard. "Roentgen Rays of Short Wave-Lengths and Their Measurements." *Am. Jour. of Roentgenology*, Vol. IX, No. 3, P. 167.
5. Duane, William, Harvard. "The Scientific Basis of Short Wave-Length Therapy." *Am. Jour. of Roentgenology*, Vol. IX. No. 12.
6. Wintz, H., University of Erlangen. "Fore Care and After Care in Roentgen Therapy." *Radiology*, Vol. 1. No. 2.
7. Faila, Giocchino, Memorial Hospital, New York. "Some Problems of Radiation Therapy." *Am. Jour. of Roentgenology*, Vol. IX. No. 8.
8. Case, James T., Battle Creek Sanatorium. "Technical and Clinical Aspects of the New Deep Roentgenotherapy." *Am. Jour. of Roentgenology*, Vol. IX. No. 9.
9. Shmitz, Henry, M. D., Chicago, Illinois. "The Technique of the Treatment of Carcinoma of the Cervix Uteri." *Am. Jour. of Roentgenology*. Vol. X. No. 3.

THE SURGICAL TREATMENT OF ADHERENT PERICARDIUM

H. M. Marvin and Samuel C. Harvey, New Haven, Conn. (*Journal A. M. A.*, May 10, 1924), feel that the operation of cardiolysis constitutes a very valuable therapeutic measure, and one that should be kept in mind by internists and surgeons. The case here reported illustrates the relief that the operation of cardiolysis (Bauer) may afford to patients with adherent pericardium and heart failure. This appears to be the sixth case reported in this country.

WORLD DEATHS

Twelve million people are accidentally killed or injured yearly. Every five minutes one person is accidentally killed.

ESOPHAGEAL DIVERTICULA*

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While oesophageal diverticulum is a comparatively rare disease entity, it nevertheless commands an important place in surgical diagnosis and treatment. In recent years the surgery of this particular condition, which is a serious menace to health, has advanced rapidly. Consequently, we are now able to give most people suffering from this malady, entire relief by means of surgery, with a comparatively low mortality.

The first known record on oesophageal diverticula was made by Mr. Ludlow⁽¹⁾ in 1764, who was a surgeon at Bristol, England. He reported the case as, "A Case of Obstructed Deglutition from a Preternatural Dilatation of, and Bag Formed in the Pharynx." Following this there were some six or seven references to similar lesions by Italian and German writers during the latter part of the same century. Sir Charles Bell⁽²⁾ in 1816 published an article entitled, "A Preternatural Bag Formed by the Membrane of the Pharynx", in which he thought the derangement was due to a protrusion through the fasciculi of the constrictor pharyngeus muscle.

The next publication of importance was that of Rokitansky⁽³⁾, in 1840. He described traction diverticula and thought they were due to a cicatrix of a previously inflamed lymph node. From this time on until the time of Zenker and Von Ziemssen⁽⁴⁾ in 1877, numerous articles were published relative to this subject, but it remained for these two gentlemen to correct the many erroneous ideas and give proper classification to dilations and diverticula. Zenker made a careful study of twenty-three cases which had been previously recorded, and in his report included five of their own cases which had come to autopsy. From this series they made the following classification: "Traction and Pulsion Diverticula",—a classification which we still use today, and have not been able to improve upon as yet.

Traction diverticula occur at almost any point along the oesophageal tract below the oesophago-pharyngeal junction. This type of diverticulum is generally conical in shape, which is thought to be due to traction from the outside caused by some cicatrix following an inflamed condition of the tissues or or-

gans contiguous with the oesophagus. These diverticula rarely cause symptoms because the apex of the pouch is smaller than that of the opening, and they nearly always point upward or lay horizontally. Furthermore, the diverticulum is always covered by all of the muscular coats of the oesophagus. The contraction of the muscular coats in addition to the position of the diverticulum obviously keep it empty and as a consequence they rarely increase in size.

On the other hand, a stricture or other obstruction below such a diverticulum may force food to lodge therein, causing it to increase in size, producing a traction-pulsion diverticulum. Judd⁽⁵⁾ describes two such cases, in one of which the patient had a cardiospasm accompanying a traction diverticulum. By dilating the cardiospasm this patient was completely relieved and nothing further was needed in the way of treatment. He states that this type of diverticulum is found in about seven per cent of all cases of traction diverticulum.

Pulsion or pressure diverticulum is entirely different from the condition just described, from the standpoint of pathogenesis, anatomical relations, symptomatology, and pathological significance. This type of diverticulum is practically always found at the junction of the pharynx with the esophagus, and consists of a protrusion of the mucosa and submucosa (Fig.

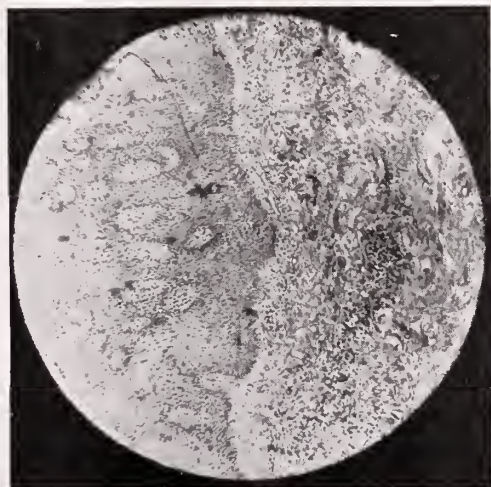


FIG. 1. Photomicrograph showing a cross-section of the resected diverticulum.

1) through a chink in the muscle on the posterior wall of the oesophago-pharyngeal junction.

*Read before the Annual meeting of the Nebraska State Medical Association, Omaha, May 13-15, 1924.

tion opposite the cricoid cartilage. This region from an anatomical point of view, is poorly supported. The outer or longitudinal coat of muscle of the oesophagus differs from the longitudinal coat of other portions of the intestinal tract in the fact that it is as thick or thicker, than the circular coat. Just below the oesophago-pharyngeal junction, this muscle separates on the posterior wall, turning around on either side of the oesophagus and later becoming attached by a tendinous attachment to the posterior portion of the cricoid cartilage. The inferior constrictor muscle tends to fill in this gap and it is at this point in particular where the oesophagus lacks adequate support and as a result we get a small protrusion of the mucous membrane accompanied by the submucosa through a rent in the muscle. As time goes on, deglutition forces this opening to grow larger and larger until eventually we have a cavity large enough to retain some of the food which is swallowed.

We must also bear in mind the physiology of deglutition which we feel plays a rather important part in the etiology of esophago-pharyngeal diverticula. A bolus of food is gathered upon the upper surface of the tongue and by a compression of the tongue against the soft palate, assisted by the myelohyoid muscles, the bolus is rapidly shot through the pharynx into the upper oesophagus. It must of necessity arrive in the region of the poorly supported oesophagus with considerable force, which undoubtedly adds insult to this region.

This type of diverticulum is nearly always found in the cervical region and for some unexplainable reason practically always lies on the left side of the oesophagus, although rarely cases are seen in which the diverticulum lies to the right. They vary as to size and shape. Some of the largest one will hold as much as sixteen ounces. The smaller types are usually spherical in form, and as they increase in size they become oblong or pear-shaped. They are rarely seen before the age of forty, and show a preponderance for the male subject.

Most of these individuals complain of their symptoms for some months or years prior to their seeking relief. They usually notice a dryness and scratchy feeling in the throat which is later accompanied by a hawking and spitting of mucous with the sensation of a foreign body being present in the throat.

Later on they notice a feeling of pressure and a choking sensation. The breath sometimes becomes foul and the expectoration of mucous becomes larger in quantity.

After a short period the individual may complain of regurgitating particles of undigested food following a meal. As the diverticulum increases in size, this becomes more noticeable, and the patient soon learns that he must swallow cautiously. He is apt to discover that various positions during the act of swallowing allows the food to slip by the diverticulum and enter the stomach. It is further noticed that at times pressure with the fingers will produce a gurgling sensation in the throat, or will cause him to expectorate large quantities of mucous or food, which may have collected in the diverticulum.

The opening into the oesophagus is sometimes rather large and as the diverticulum increases in size, it lying parallel with the oesophagus, the pressure which it exerts against the oesophagus after it becomes filled causes almost total obstruction. Also, the traction from a large diverticulum after it is filled, may distort the oesophagus to such an extent that the channel will become a narrow slit-like opening which will not permit the passage of food.

As soon as the obstructive symptoms appear the patient begins to lose weight rapidly. The inability to swallow solid foods becomes more noticeable and later they notice marked difficulty in trying to swallow semi-solids and liquids. The weight loss may be very marked, from ten to sixty-five or seventy pounds, and owing to the obstruction present, in addition to the weight loss, it is not uncommon to have these individuals diagnosed as carcinoma of the oesophagus. This may be followed by a gastrostomy and the individual be left to lead a miserable existence. Later he seeks further relief and is usually rewarded with a conclusive diagnosis, rational surgery, and a complete cure.

The diagnosis is not particularly difficult if one bears in mind the history of such lesions, and if we encounter an individual who complains of difficulty in deglutition, he should be x-rayed immediately (Fig. 2). This will nearly always lead to a proper diagnosis. However, the ray should be verified by an oesophagoscopy examination to rule out the existence of stricture or another diverticulum below.

The treatment of oesophago-pharyngeal

diverticulum is principally surgical. Cases in which there is a small sac, and in others in which there is a contra-indication to opera-



FIG. 2. X-ray photograph of the diverticulum extending well into the mediastinum.

tion, the Mixer⁽⁶⁾ method of dilating the oesophagus will relieve most of these individuals temporarily. However, no form of treatment should be instituted for any length of time without resorting to surgery, if rational, and especially so if there is an inclination toward inanition. A patient should not be allowed to get in extremis due to the lack of food. Some of them present themselves in this condition and in the past it has been the practice to do a gastrostomy in order that the patient may be built up preparatory for the radical operation. It is very seldom that it is necessary to resort to this method of treatment because rectal and stomach-tube feedings will usually suffice to correct dehydration and starvation and permit subsequent radical operation with a minimum risk.

Until recent years surgery for this type of an affliction was regarded as a very serious matter. It is only necessary to refer to our last edition of Keen's Volumes in which you will find the mortality in oesophageal diverticula quoted around 16 per cent. Within the last eight or ten years in particular, this operation has been so perfected that now we consider the risk very slight.

In the past, the one-stage operation of resecting the diverticulum immediately and trying to close the oesophagus, was met with a high mortality because the oesophageal tissues tend to tear easily and it is a difficult procedure to close these tissues so there will be no cutting or leakage in the suture line. In the one-stage operation, many of the wounds leaked before sufficient granulation tissue had formed to wall off the operative area and as a consequence the oesophageal contents ran down along the anterior portion of the vertebrae into the mediastinum, setting up a severe infection which nearly always resulted in death.

Owing to this fact, Girard⁽⁷⁾ conceived the idea of inverting or plicating these diverticula. This method was elaborated upon by Bevan⁽⁸⁾ who dissected the sac from its bed behind the oesophagus and in front of the vertebrae, and after freeing the neck of the sac from the surrounding tissues, the diverticulum was purse-stringed into the oesophagus where it would probably atrophy or undergo sloughing and be discharged. This method is applicable in all cases in which the sac is small. However, if the sac is large there is a tendency for it to cause obstruction in the oesophagus, or be regurgitated into the pharynx and cause strangulation. Furthermore, in this type of operation there is the possibility of a recurrence. In fact, Girard, in his article mentions one case in which after sneezing the purse-string broke loose, followed by a recurrence of the original diverticulum. Judd in his article likewise reports another recurrence following this type of operation.

The next method, and the one which we used in the treatment of our case, to be reported at the conclusion of this paper, consists of the two-stage operation, first suggested by J. B. Murphy⁽⁹⁾, and later improved upon by C. H. Mayo⁽¹⁰⁾. An incision is made along the anterior border of the left sterno-mastoid muscle. This muscle is retracted outward and the sterno-thyroid group of muscles are retracted inward. Next, the left lobe of the thyroid gland is freed and it too, is retracted inward. The carotid sheath with its contents must be identified and retracted outward. Extreme care must be used in avoiding injury to the recurrent laryngeal nerve. If the sac is large, there is usually no difficulty in recognizing and isolating it. However, should it be small, it might be well to insert a sound, or some other instru-

ment, through the pharynx to definitely locate the sac. Again, if the sac is large and a general anesthetic is being administered, extreme caution should be taken to see that the sac is empty before the operation is undertaken, because its contents might be expressed into the pharynx during the procedure with asphyxiation of the patient.

After the sac is recognized it is dissected free from the surrounding tissues. It is then brought out and the muscles sutured about it. (Fig. 3). Care must be taken at this point

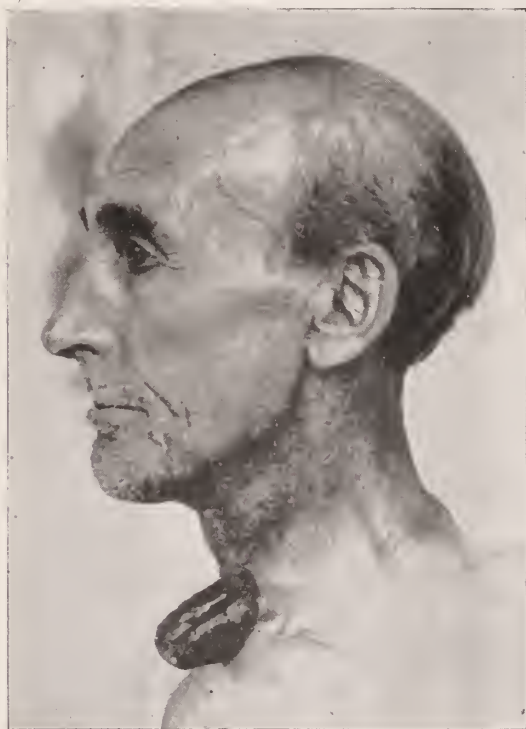


FIG. 3. Photograph taken three days after completion of the first-stage operation. The diverticulum is sutured to the muscles of the neck and the skin closed around it with demal suture.

to avoid including too much of the oesophagus when drawing out the sac, especially in those diverticula in which the opening is large, because it will tend to produce a constriction at the point of resection.

Murphy suggests twisting the sac, but in Judd's experience he has had cases in which the distal portion of the diverticulum sloughed following this procedure. To avoid this, Judd simply sutures the neck of the sac to the muscles or the skin. After the sac is sutured in position, an ordinary vaseline dressing is applied. Then after waiting for ten or twelve days, sufficient granulation tissue has formed around the operative field to prevent contamination of the mediastinum. Following this the sac is cut off (Fig. 4) without

an anesthetic and the possibility of contamination of the mediastinum is negligible. The mucous membrane is then inverted by means

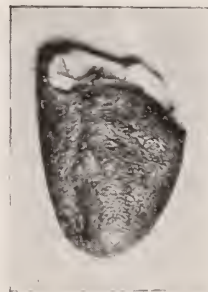


FIG. 4. The diverticulum after resection.

of a purse-string suture, and the wound dressed in an ordinary aseptic manner. Occasionally a small fistula will form. In our particular case we did not have this difficulty, but if such should occur, it will usually take care of itself after one to two weeks.

Our case was that of a man sixty-six years of age, who came to us complaining of throat trouble. He stated that ten years ago after eating raw apples he would "spit back" part of the apple immediately after swallowing. Two or three years later he noticed the same difficulty after eating ordinary

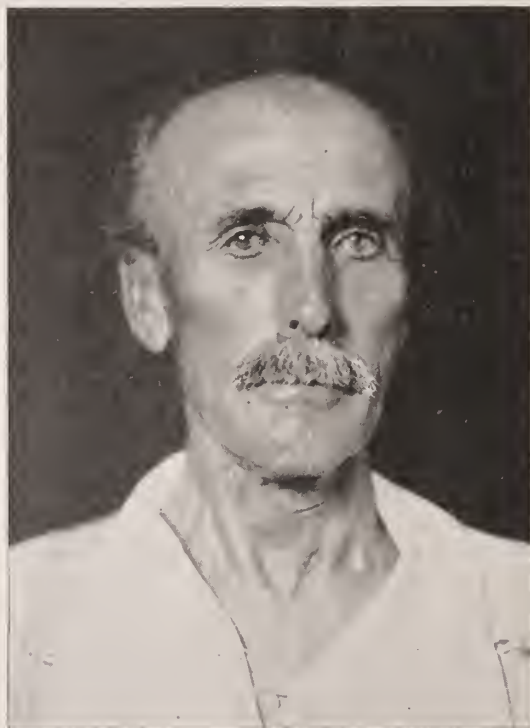


FIG. 5. Photograph taken 22 days after completing the second stage operation.

food. From then on he gradually grew worse until at the present time he is unable to swallow liquids freely. In fact, about one-half of the water he swallows is regurgitated. He does not vomit but

says that he simply "spits it back". His breath is foul at times and a gurgling noise is noticed occasionally. For the past two years he has been required to arise at night once or twice to expectorate a large quantity of mucous. He has been unable to satisfy his appetite and as a consequence there has been a gradual loss in weight.

A complete physical examination was entirely negative, with the exception of evidence of weight loss. His normal weight is 150 pounds. His present, 136 pounds. This loss has taken place during the past year. Both blood and urine examinations were negative. The x-ray revealed a diverticulum at the oesophago-pharyngeal junction.

On September 25, 1923, we did the first stage of the two-stage operation, freeing the sac of the diverticulum and suturing it to the muscles of the neck. On October 9, 1923, the second stage of the operation was done. The diverticulum was cut off without an anesthetic and the mucous membrane was inverted with a No. 1 chromic catgut. The patient was immediately able to swallow water following this procedure, and from this time on he made an uneventful recovery. On November 1, 1923, the wound was entirely healed (Fig. 5). At this time the patient was gaining in weight rapidly and had no difficulty whatever in swallowing any kind of food.

DISCUSSION

Dr. Frank Conlin, Omaha: I want to emphasize what Doctor Arrasmith has said about the symptoms these patients complain of, particularly the sensation of a tickling or foreign body in the throat. Two years ago a patient came to the Dispensary at the University of Nebraska, complaining of this symptom with regurgitation of food at times and some slight difficulty in swallowing. For this symptom she had her tonsils removed, the uvula had

been amputated and a diagnosis of intrathoracic goitre had been made. Physical examination including blood Wassermann and urine was entirely negative. We were suspicious of a diverticulum and the x-ray examination confirmed this diagnosis. The diverticulum was of the pulsion type—coming out at the posterior side of the esophagus, at the esophageo-pharyngeal junction. At this point, as already stated by Doctor Arrasmith, there is a triangular area (Laimer's triangle) in which the mucous membrane is covered with very thin layer of muscular tissue. The bottom of the diverticulum was within the upper thorax on the left side.

The patient would not consent to an operation and I cannot tell you of any further progress.

REFERENCES

1. Medical Observations and Inquiries. Vol. 3, pp. 85-101.
2. Surgical Observations. Charles Bell, London, 1816, pp. 64-70.
3. Oesterreichische Medizinische Jahrbucher, 21-1840, p. 222.
4. Krankheiten des Oesophagus, F. A. Zenker and H. V. Von Ziemssen, Leipzig, 1877, pp. 50-87.
5. Judd Archives of Surgery. July 1920, Vol. I, pp. 38-52.
6. Mixter, S. J.—Congenital Oesophageal Pouch, Excision. Immediate Suture of the Oesophagus, Recovery. Tr. Am. Surg. Assn., 1895, XIII, 357-360.
7. Girard, Association Francaise des Chirurgiens 2 me Congres, Paris, 1896, p. 392.
8. Bevan, Surgical Clinics, Chicago, 1917; 1, pp. 449-457.
9. Murphy, J. B., — Surgical Clinics, Chicago, 1916; 5, p. 391.
10. Mayo, C. H., — Diagnosis and Surgical Treatment of Oesophageal Diverticula. Report of eight cases; Am. Surgery, 51-812, 1910.

THE TREATMENT OF THE PATIENT WITH AN ANO-RECTAL COMPLAINT*

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In presenting a paper before this society, relating to the diagnosis of ano-rectal diseases, I should offer an apology, because of its elementary character, but in view of the fact, that I see frequently cases which have not been properly treated because of an incorrect diagnosis which was the result of an incomplete examination, I believe that a few wordsemphasizing the importance of a careful examination are timely. The physicians of today are well trained in the method of diagnosis, since they have all been taught the principles and methods of diagnosis which they should employ. In order to make a diagnosis, the procedure which is usually followed is first, you obtain a complete history; second, you make an inspection or observation; third, you employ palpation, or percussion as the case

may be; fourth, auscultation or instrumental examination; fifth, special examinations, including examinations peculiar to that part of the anatomy, and the necessary laboratory examinations. If this outline were always followed you should have some idea as to the physical condition of the patient, but it seems that most patients with ano-rectal complaints are deprived of this method of examination. Ano-rectal lesions, in many cases are very distressing and the improper treatment or lack of treatment at the proper time will frequently allow a simple affection to assume one of great magnitude. The history in ano-rectal diseases in most cases is quite clear cut, and by careful questioning you can usually arrive at a tentative diagnosis, which you will be able to confirm upon examination. In our histories we should first of all ascertain what brings the patient to us. What is his

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chief complaint? It is pain, bleeding, swelling, protrusion, discharge, itching, some constitutional disturbance relative to the passage of stool, such as exhaustion, or abdominal pain, pelvic pain, pain in the legs or is it dysuria, constipation, diarrhoea, incontinence, tenesmus, or the presence of blood, mucus or pus in the stool, or finding of an abnormally formed or shaped stool, such as ribbon shaped or lumpy stools. Some one or some combination of these symptoms will usually constitute the chief complaint.

After obtaining the chief complaint we should obtain the family history as it may have some bearing upon the interpretation of the findings. The past history is important, especially that of infancy, and early childhood, and that relating to previous illnesses. The beginning of a rectal complaint, is often associated with some prolonged illness in the past. Especially such conditions which have necessitated hospital confinement. Most hospital trips include severe catharsis, repeated enemas, and it is during the administration of enemas that the ano-rectal mucosa is many times injured, thus opening up avenues of infection in a patient with a lowered resistance. At other times, traumatic injuries and wounds about the anus or rectum will give rise to severe infections.

The history of their present trouble should be gone into very carefully. It not only gives the physician valuable information, but it allows the reticent patient to become acquainted and more composed. Patients with ano-rectal diseases usually have a false sense of modesty and many unless properly handled prefer to have you prescribe for them without examination, because of this reticence.

I have enumerated a list of the symptoms of which these patients commonly complain. I will not attempt to discuss each symptom singly, but I do wish to bring out those which I think are most important. These are: pain, bleeding, protrusion, swelling, discharge, and itching.

Pain: Affections of an inflammatory nature in this region are extremely sensitive and the patient seeks relief early. The common inflammatory lesions are fissures and ulcerations in the anal canal, peri-anal and peri-rectal abscesses, fistula, infected crypts and acute proctitis. Other painful lesions which are not inflammatory are external and internal thrombotic hemorrhoids, enlarged papillae, and lesions due to the presence of foreign bodies. Internal hemorrhoids are not

included here because piles which are not ulcerated are usually not painful. Bearing in mind the lesions which are most apt to be accompanied by pain, we then question the patient as to the location of the pain. Is it outside of the rectum? Is it in the anal canal, or is it within the rectum? Is it referred to some other part of the body while at stool? If the painful area is external, the patient will usually locate it, as to the right or left or in front or behind the anus. We then ascertain when the pain occurs. Does it precede the stool? If it does, is it due to a filling of the rectum. Does it come at the time of the stool or does it follow the stool? Is it intermittent or is it constant? What is the character of the pain? Having ascertained this data it is often helpful to ask the patient if they have been able to obtain relief in any way and if so, how?

Bleeding: The passing of blood, usually alarms a patient, and this may be the only complaint, which causes him to consult you. He has reason to be alarmed because the public is being taught that a bloody discharge may mean cancer. So do not disappoint or disillusion a patient by asking him a few questions and then prescribe a suppository for him and assure him that his bleeding is from piles. The passing of blood from the rectum should call for the same careful examination which would be indicated by the vomiting of blood. Learn all you can by the history such as the quantity of blood, the character of it, whether it is fresh or old. Does it precede the stool or does it follow the passage? Or does it occur independently of a passage? This happens when the lesions are external or when there is some incontinence. The sources of the bleeding might be considered in this way:—

First: Lesions external to the anus and those in the lower portion of the anal canal. These lesions would commonly be fissures or ulcerations, external hemorrhoids, condylomata, pruritic areas and epitheliomata, and the openings of fistulas, and prolapsed internal hemorrhoids which are ulcerated. The blood from all these would be independent of a movement.

Second: Lesions within the anal canal and rectum, such as fissures, or ulcers, polypi, enlarged papillae, internal hemorrhoids, proctitis, specific or non-specific ulcerations, malignancies, impactions and fecoliths. The blood from these lesions will occur with the

stool and may be fresh or old, small in amount or profuse and may precede, accompany, or follow the stool. Further examinations only will locate the source of the bleeding.

Third: Lesions above the rectum and constitutional conditions, which produce blood in the stool, such as tuberculosis, typhoid, diverticulitis, ulcerative colitis, malignancies, cirrhosis of the liver, intestinal parasites, amoebic dysentery and the acute enteritises, and intussusception.

Lastly: It must be borne in mind that bleeding may come from trauma or injury due to some foreign body within the intestinal canal which may have been taken with the food.

Protrusion: In questioning the patient concerning protrusion, I find that the patient's answers are not always correct, in that he may have a very large protrusion, but does not know it, and he does not consult you because of protrusion but because of some other symptom, probably discharge or irritation about the anus. Where he does give a history of protrusion, ascertain what is the extent of it. Whether it is localized to one side of the anus, or whether it encircles the entire anal ring. Does he have to replace it himself, or does it go back by itself? What is the consistency, and the contour of the protrusion? Is it easily replaced and is there any pain incident to its occurrence and replacement? In replacing the protrusion, is there any blood from the protrusion? Is the swelling or protrusion painful? Is it present at all times, or does it come only occasionally? Can he demonstrate it by straining? If, in the case of young adults and their parents are at hand, it is well to question the mother as to whether the patient as a child had any prolapse. If the patient is a child and has a prolapse do not forget that an intussusception may protrude from the anus.

Discharge: This in most cases will mean one of two things, either a fistula or pruritis, but occasionally it is due to hemorrhoids or proctitis, or it may be brought about by the presence of condylomata accuminata, or lata, and it may be due to an incontinence or to the presence of a pilonidal cyst in the sacro coccygeal region. Strictures low down in the rectum often cause involuntary discharges from the anus. You should question the patient as to the character of the discharge. Whether it is constant, or intermittent, purulent, watery, or bloody.

Itching: This is one of the frequent com-

plaints of patients with rectal trouble, and in most all cases it is attributed to the presence of piles and frequently there are none present.

The itching is not within the anus, but in the peri-anal skin, extending up to the ano-rectal line. The cause may be constitutional, local, or idiopathic, so determine first, if possible, that what you find is not due to some constitutional ailment, such as a diabetic condition, or a gouty diathesis which might account for the itching. The most common causes are proctitis, papillitis, cryptitis, fistulae and redundant external tags, and ulcerated hemorrhoids. One must also think of parasites such as pediculi and pin worms.

Lastly: Another class of patients will come to you who have no definite symptoms, no one thing of which they will complain, and will tell you that they have a sensation which to them is indescribable, but it is located in the ano-rectal region. Dr. Harrison Cripps says, "The earliest symptoms of malignant as of many other diseases of the rectum is the consciousness of the patient that he possesses such a portion of the body." So we see frequently patients who come with the feeling that they have rectal trouble, but cannot describe it. These cases should have a most scrupulous and careful examination because these obscure symptoms may be the early signs of a cancerous condition, and if we are able to locate some focus which is the beginning point of cancer we may be able to benefit our patient greatly. We have long since passed the time when we should wait for a cancer to become full grown in order to recognize it. Our only hope for relief is an early diagnosis with surgical intervention before metastasis has taken place.

Most patients dislike to have a rectal examination made, because they are usually placed in a very awkward and embarrassing position, and the physician himself is often times embarrassed, and only goes through the motions of making an examination and really does not gain any information by his examination. The stooping position, the knee-chest position, and the lithotomy position, are those most commonly employed and they are the most unsatisfactory. The patient should be placed in the Sims' position, on his left side on an examining table and the examiner can then seat himself comfortably on a chair or stool at the side of the table and is then in position to make a complete examination. The patient is comfort-

able and may be completely covered or draped with a sheet, so that there is no unnecessary exposure. By lifting the upper buttock you are able to make a careful inspection, locating scars, discoloration, tumors, swelling, ulcers, fistula openings, and abnormal conditions which may be present. After inspection, palpation of the parts can be made. You are frequently able to locate indurations, which are indicative of abscesses, fistula tracts, tumor masses and things of that type. Even though there may be no visible lesion around the anal fold by palpating the peri-anal areas you may locate the seat of the pathology which is within the anal canal. Having completed the inspection and palpation, you should make a digital examination. This should always be done before any instrumental examination. The reason for this is that frequently we encounter lesions that are so extremely tender and painful that they preclude the possibility of any instrumental examination. In case there is a stricture present, which is situated low down in the anal canal, you would encounter some difficulty by trying to insert a large speculum.

The gloved and well lubricated finger should be inserted into the anal canal sweeping the palmar surface of the finger around the entire circumference of the anus, noting especially the presence of swellings, of depressions, and of indurations. After the anal canal has been palpated the finger is passed higher up into the rectum to locate lesions, which may be, within the rectum itself. It must be remembered here that 90% of the ano-rectal pathology is within the anal canal which is only, from one to two inches in length, and that the most common error that is made in making examinations is by inserting the finger high into the rectum to locate the pathology which is in the anal canal. Having completed the digital examinations and finding that an instrumental examination is not contraindicated, a direct view of the anal canal and rectum with a proper speculum, will reveal to you all pathology that is present and be a means of completing your diagnosis. The choice of a proper speculum is of the utmost importance. The bivalve speculum is not a diagnostic instrument, but is an instrument of torture. The most satisfactory speculum which I have used has been the Hirschman anoscope of the large size. This is a tubular speculum with an opening on the side into which a small round obturator is fitted. With the obturator in place and with

the instrument well lubricated it is inserted gently into the anus, the obturator is removed, exposing practically $\frac{1}{4}$ of the circumference of the anal canal. By replacing the obturator and turning it around, you will be able to view the entire anal wall. Furthermore, by placing the patient in a knee-shoulder position and by using the anoscope you will be able to see for a distance of 4 to 6 inches up into the rectum. If, after completing the examination thus outlined, you have reason to think there is some pathology higher up within the rectum or sigmoid, you may resort to the use of the sigmoidoscope or to the use of a Barium enema which will help to reveal any pathology which may be present.

I would like very much to discuss the differential signs occurring with the various conditions but I will not be able to do so at this time. The object of this paper has been, as stated before, to emphasize the point that the patient with an ano-rectal ailment, is entitled to the same careful examination and treatment of his condition, as the patient with any other condition. But it is a sad fact that a large per cent of patients complaining of rectal trouble are not examined and many of those that are examined, are treated either for piles or fistula regardless of what may be present.

DISCUSSION

Dr. J. F. McDonald, Omaha: I have enjoyed Dr. Moon's excellent paper on ano-rectal disease. In his discussion of symptoms he mentioned pain, local and referred.

For several years in my work in anatomy, physiology and clinical medicine I have been interested in pain and the mechanism of pain. In going over the literature in connection with some recent original work in the hospital on visceral referred pain I find not infrequently in modern text books and the journals the extraordinary statement that the rectum has no sensory nerves. This is, of course, a gross anatomical and physiological error. If the rectum has no sensory nerves it could give rise to no pain or other sensory quality, either local or referred.

It is interesting that such statements survive in current literature in spite of the fact that the contrary has so long been well known. Such authorities as Gaskell and Langley and Anderson and others have demonstrated the presence of these visceral nerves. Herz and others have shown the same thing by physiological methods. Head and many others have mapped out somatic fields of pain reference for the rectum and other viscera.

This error probably results from the fact that the receptors of any region respond normally, as Sherrington emphasizes, only to a particular kind of stimulus, the adequate stimulus. It is a common mistake to confuse the adequate stimulus of an in-

ternal organ with the adequate stimuli of the skin. The latter, whose function is to analyze the environment, respond to various environmental forces. The visceral receptors, protected from these forces, do not respond to them. They are, therefore, insensitive to touch, mechanical pressure, etc. The principal adequate stimulus for the rectum is distention, and it responds to this stimulus either in a sensation of fullness or pain, depending on the amount of distention. The call to bowel evacuation depends upon this sensory mechanism. It is generally considered a variety of muscle sense, and has been shown to be deficient in diseases like locomotor ataxia in which the tracts of Goll and Burdach are degenerated.

A special difficulty in connection with rectal referred pain is the widespread somatic areas innervated from the same cord level as the rectum. The rectum refers pain to the lower thoracic and upper lumbar levels in connection with the sensory accompaniments of the sympathetic outflow on the one hand, and to the sacral segments along with sensory companions of the parasympathetic on the other. The corresponding somatic sensory area has thus a wide distribution. It encircles the body in the lower abdominal levels; it takes in the saddle area, including perineum, genital organs and the gluteal region and, on account of the outgrowth of the lower limb buds opposite the lumbar and sacral segments, it extends down the legs and thighs to the toes. Hence the extended region for rectal pain reference and its projection to the lower part of the trunk and down over the lower extremities. The bladder and prostate are innervated in a similar man-

ner from the same cord levels and may share somewhat in common the same somatic projection fields.

One curious fact of visceral pain reference is that frequently a serious visceral lesion in some patients projects pain upon the corresponding somatic segments, while in others, equally serious lesions of the same organs are unaccompanied by referred pain. The phenomenon of referred pain requires further study, and yet I find from the literature that it is rather generally neglected. I should like to see this subject attacked more generally and more intensively by the different specialists. It would give us richer diagnostic data in visceral disease. The rectum is accessible to a more direct means of information, and probably would not gain so much as other internal organs from the development of the subject of referred pain.

I would like to ask Dr. Moon if a considerable portion of his patients with rectal lesions complain of referred pain, and if so, what is the usual site of pain reference.

Dr. Moon (closing): I think the pain we have most frequently due to hemorrhoids is probably an aching in the legs. It does not go below the knee. There is a weakness in the lower part of the back. Another frequent referred pain is frequency of urination. With prolapsing hemorrhoids, a patient may get up every hour during the night. After clearing up the rectal symptoms, he will be relieved. Backache is one of the frequent referred pains, the pain extending down the legs to the knees, but not much below.

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A MUCH NEGLECTED DISEASE*

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It may seem presumptuous to classify a disease as in the title, better "the neglected patient" for it is he or she in the final analysis that is neglected.

So much has come to the writer's attention or under his observation concerning gonorrhea and its complications that some thoughts thereon seem worthy of presentation. It is hoped a constructive intent will be recognized. Contrary to general acceptance gonorrhea concerns the numerous and various specialties of medicine as well as the general practitioner. Gonorrhea is a disease of civilization probably more than any other disorder and is a direct challenge to the medical profession. Particularly in the early stage it is the most vital problem the physician has to deal with and carries a corresponding responsibility.

Until the recent control movement, this disease was, with few exceptions, handled by the physician with indifference, if at all, and is today greatly neglected in that the aver-

age patient does not receive the individualized care and attention to which he is entitled and should receive from the physician who assumes the case. Too often the same archaic methods are employed as formerly by many who profess to treat or rather who "treat at" this disease. This might apply to other conditions. Society is entitled to our best efforts in both diagnosis and treatment. Is there not significance in the fact that as a rule cultists (dignity is not accorded their naming) when they believe gonorrhea exists, shy from treating the case?

Gonorrhea has unfortunately been classified as a self limited disease without a supplementary statement covering the tendency to chronicity and the proneness of gonococci to hibernate in the submucous and deep glandular structures ever ready to recurrence under favorable circumstances. Recurrences account for many multiple infections.

Exhaustiveness is not contemplated, much is glossed over being left to be gleaned from the numerous texts and ample literature on the subject. Time precludes a review of the

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anatomy, histology and pathology of the urogenital systems. Let it suffice to recall that the gonococcus has a predilection for columnar not squamous epithelium. This explains why we do not have primarily a gonorrheal vaginitis in the adult female—if this condition exists at all it is always secondary. The pavement membrane of the vagina is nonglandular and very resistant to infection.

As neglect often results from failure to recognize the points of infection in the female, attention is called to the urethra and its glands, Bartholin's glands, and the cervix as the primary seats of involvement. The endocervix with its multiplicity of glands is fertile soil for the gonococci. Early recognition of such involvement with active treatment offers the best opportunity for a cure in this sex. Delay results in damage. Nature has provided an excellent barrier in the internal os thereby affording much protection to the adnexa. The old chronic case cannot be so optimistically prognosed; therefore, the importance of early treatment while the disease is and tends to remain localized.

Gonorrhea being much more prevalent in the male much of this position as to neglect lies in the fact that cases are continually coming into the hands of the urologist which as acute anterior urethral infections presented themselves to a physician upon the first evidence of discharge or suspicion of same, the subsequent history revealing careless injections, early forcible posterior irrigations with consequent posterior infection, crude promiscuous sounding, traumatism, epididymitis, etc., chronicity, exacerbation or recurrency of the disease. The writer does not agree with those that claim that the latter are new infections—his contention being that the case was not cured upon cessation of discharge or at discontinuance of treatment, though in many instances the patient was probably better off. Due to alteration in urethral membrane (the columnar cell being replaced by a squamous type) as a result of specific urethritis, the average case is somewhat less susceptible to gonococcal reinfection than the novice.

Further, the writer wishes to state that the majority of anterior urethral infections would not develop posterior involvements if properly handled from the beginning, some able writers to the contrary. Metastatic complications do not usually occur in carefully conducted cases. The "continenta!" or early "through" treatment is faulty both in

technique and principle with anterior urethritis. This form of treatment is advocated by some on the theory that posterior involvements will occur anyway—the thoughtless acceptance of this position is mentioned in order to condemn. If posterior involvement does occur a careful review and analysis will show either faulty technique or failure of compliance upon the part of the patient. Where is the physician who can point with pride to results obtained from the use of a stereotyped method of treatment — yet, to follow much of the literature and its application, that is the most common procedure in gonorrhea. Recently a prominent urologist advocated a treatment for this disease somewhat as follows: So many days of this in a given strength, so many of that, etc.—*pres-to*: Appears like a reversion to a cruder empiricism than has been employed in modern times and reminds one of a recipe.

There is today too much "use this injection and come in next week" or "here, take your irrigation, you will soon be well." Under careful attention severe anterior infections, some complicated by periurethral abscesses with subsequent "flare ups" have been kept confined to the anterior urethra throughout the entire course and finally discharged as cured.

Many "sure cures" are being exploited and foisted upon the unwary susceptible physician who seems to await the visit of the next high pressure instructor in therapeutics. This is not a disparagement of the many clean representatives who courteously present their subject for one's consideration without any attempt to designate the treatment for X and the balance of the family. Some of the cleverly written articles extolling the virtues of the "latest cure" are almost as alluring to the physician as the patent medicine ads that appeal to the laity. It behooves one to be both critical and skeptical before accepting too readily the NEW.

Urethral sterilization by means of electric light or high frequency apparatus exists chiefly in the fertile brain of the versatile electro-therapeutic salesman — what physician would permit the insertion of a high frequency vacuum electrode into his urethra? However, this method is used today in spite of reports that breakage has occurred. Are we justified in accepting the claims for bactericidal properties of the quartz light in dealing with gonorrhea? Only a few years have elapsed since some were securing won-

derful results from x-ray in gonorrhea — these are silent now. Deduct the commercial aspects and in the electric field we find three modalities of value and these principally in the complications viz: Electro-cautery, diathermy and galvanism.

Vasotomy for injection of the vas has properly become quite moribund. This is rarely indicated.

Protein therapy including serobacterins is limited to complications outside the urogenital tract though some favorable reports exist on this treatment in epididymitis.

Complement fixation is of little value in gonorrhea; it has been negative with gonococci found in the semen, conversely it may remain positive months after gonococci have disappeared — thorough examinations being made.

The diversity of opinion relative to the use of silver nitrate should cause one to resort to this drug with deliberation. Its superficial action with frequent accompanying mixed infection may prove more of a liability than an asset.

The false statement that gonorrhea is an incurable disease has sent many men to the drug clerk who can at least supply agents that will check if not stop the active discharge—this being rather simple.

Unquestionably one of the most important steps in the treatment of gonorrhea is to gain the patient's confidence. Medicine with all its ramifications presents no field where it is so difficult to gain and retain this confidence. As a consequence all too frequently we have neglect of both the disease and the patient. Confidence can be secured by frankness coupled with free discussion and sufficient explanation to enable the patient to grasp some of the whys and wherefores. Do not harbor any erroneous ideas about this phase, the knowledge possessed by some patients will astonish one.

The diagnosis of this disease is microscopic based on the Gram method of staining only—no short cuts are permissible as there are numerous simulating microorganisms. The simple methylene blue or other stain is inexcusable when gonorrhea is suspected. Exceptionally cultural aid should be added though this method is more likely to be necessary for determination of cure.

Gonorrhea is a disease of many stages and degrees, fortunately we have a definite means whereby each case can be worked out

as an entity—the microscope, without which one is simply wandering in the dark. The writer is fixed in his view that the microscope must be used frequently and regularly in conducting any case—male or female—to the successful conclusion of a cure. True, it is a great time consumer but one is well repaid for the time expended. Furthermore no case of any nature should be assumed if one is not willing to devote the time and effort necessary to gain the objective, any other action is not only an injustice to the patient but to the physician and his profession. Why do we so often close our eyes to our responsibilities—is it because of a general trend in our national life?

Another essential visual aid is the endo or urethroscope which is an invaluable instrument for diagnosis and treatment in both male and female. With it one can detect localized foci and usually promptly and effectively eradicate them. Its use is limited to the less active cases. In connection with this use remember that the urethra is exceedingly sensitive, nevertheless, especially in the male, one should refrain from resorting to local anesthetics. If a single rule were to be made governing the practice of urology the outstanding and emphasized point therein should be **UTMOST GENTLENESS**.

Hygienic measures are very important in all stages and it is the physician's duty to see that he is receiving cooperation—placing the responsibility direct. Strange as it may seem the microscopic picture will often enable one to detect the patient's laxness.

The surgical principle of free drainage is of particular import in this disease. While hyper-acute or severe inflammations require prompt efforts toward alleviation the moderate inflammation is to be desired, this being where the tissue action is most effective in destruction of the gonococci. Stimulative treatment of a progressive nature, careful to avoid over irritation is indicated in the sluggish or indolent type. Excessive exfoliation resulting from some solutions warns one to be cautious. Remember that gonococci become deeply buried in the mucosa well protected from medicinal agents, that tissue toleration for gonococci develops and that this organism often undergoes a change in virulency. Also keep in mind the tendency of the urethra to tolerate medication, therefore, often nonresponsive to medicinal stimulation. Avoid early use of astringents.

In the search for foci of infection consider

the prostate. With technique based on the anatomy excellent results accrue from massage in the chronic prostates. Cleansing the urethra prior to this procedure enables one to secure uncontaminated specimens for examination.

Occasionally careful differential technique reveals the chronic gonorrhoeic to be free from gonococci and suffering from a low grade persistent secondary infection sometimes in the lacunae, crypts or glands, often posteriorly. The absence of gonococci in a few smears does not justify assumption of cure. Repeated examinations must be made, complete and thorough in detail, the terminal examinations sufficiently long after cessation of treatment (usually three to six months) for one to ascertain the true status.

No attempt is made to dictate treatment nor present a specific—there being none so far as drugs are concerned. Results are secured by keen interest, close personal attention, painstaking effort and intelligent application based upon a recognition of the pathology existing, the characteristics of the gonococcus and the physiologic action of available agents whether medicinal or mechanical.

As the object of this paper is to interest, if possible, and stimulate thought toward overcoming neglect, a few questions seem apropos:

Why the indiscriminate use of the so call-

ed gonococcocides and astringents based upon the worn out, faulty theory that cessation of discharge is a criterion of cure totally ignoring the fundamental principle involved in any infection—free drainage?

Why the lack in courage of convictions and moral stamina to inform those entitled as to the nature of the infection thus safeguarding those concerned? A member of this society recently informed the writer of the disastrous and far-reaching consequences incident to such an attitude.

In this day of enlightenment why hesitate or procrastinate in resorting to laboratory aid in infection of the eye—another recent occurrence which proved to be gonorrheal after much damage resulted?

Why waste time learning the physiological action of drugs if we propose to ignore such knowledge when we use a drug locally?

Why not give as much credence to the ramblings herein as to the routinist or the laboratory opponent who never attempts to carry a case of gonorrhea through to a successful conclusion with the visualization afforded by the microscope and the urethro-scope?

Finally—the most important and most difficult question, one pertaining to the whole field of medicine—HOW IS THE LAYMAN TO DETERMINE WHO IS A COMPETENT PHYSICIAN?

SOME PHASES OF THE ULCER PROBLEM

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No medical subject has caused a greater discussion during the last few years than that of peptic ulcer, a subject of interest to the surgeon and the medical man alike, although they are still far apart in their estimation of the relative value of the two lines of treatment.

The successful treatment of any disease presupposes an exact knowledge of the etiology and pathological physiology of that disease. The time has come for us to recognize that in dealing with peptic ulcer we are not dealing with a disease of the stomach or duodenum *sui generis*, but with a disease complex in which the stomach or duodenum has become secondarily involved (Smithies)⁽¹⁾. Such disease may be initiated by a wide variety of systemic up-sets, and, as a

result, a wide variety of etiological factors are brought forward to explain it. Different types are noted, various contradictory physiological factors reported, and, as a result a great variation in systems of treatments instituted.

ETIOLOGY

In the etiology of the ulcer two facts stand out as absolutely requisite for its development. First, an injury to the mucous membrane, and, second, the digestive action of the gastric juice. There are many theories advanced as to what causes these results, and like all diseases of unknown etiology, each of the theories advanced has an element of what may at some future time prove to be the real explanation. In considering the etiology of gastric ulcer we must remember we are considering the etiology of acute ulcer.

Another problem that must then be solved is why the ulcer becomes chronic.

According to Claude Bernard, the mucus, by its mucin content, acts as a protective covering to the epithelium of the stomach. It has been demonstrated by Kaufman that in gastric ulcer there is a lack of mucus (Rost)⁽²⁾. This may be one of the factors in the development of ulcer. The frequency with which ulcer manifests itself during periods when the infections are more common has been noted by all clinicians. It is believed that old infections either activate old unhealed ulcers, or that the bacteria from them circulating in the blood localizes in the mucus membrane of the stomach as emboli, lowers the local resistance and ulceration ensues. Rosenow⁽³⁾ has injected streptococci, isolated from gastric and duodenal ulcers in man, into the venous circulation of animals, and has produced gastric and duodenal ulcer in over sixty per cent of his cases. Exacerbation of the symptoms of chronic ulcer may be due to renewed infection. As well stated by Lehnhoff⁽⁴⁾: "The exacerbation of unhealed processes above the shoulders is definitely related to the unhealed processes below the diaphragm." The focal infection theory is one that is entirely acceptable to the clinician he must act accordingly."

GENERAL ANEMIA. General anemia is a condition not uncommonly found in ulcer patients. General anemia lowers the resistance of the mucous membrane and prepares a place of least resistance.

Reeves⁽⁵⁾ has shown that the arteries on the lesser curvature and the first inch of the duodenum are terminal arteries. He believes that bacteria, or other emboli, may locate in these terminal arteries and produce ulcer. The rigid posture of the pylorus causes anemia of the pylorus during periods of the digestive phase and allows a large amount of highly acid chyme to come in contact with this vitiated mucosa⁽¹⁷⁾.

The stomach, the duodenum and the small intestine, down to the ileo-colic junction, are supplied by the vagus nerve. There is a type of individual "vagotonic" (Hess and Eppinger⁽⁶⁾) in whom the vagus stimulation is marked. It is manifested by hypersecretion, hyperacidity and hyperperistalsis, all factors which, taken with the other etiological factors mentioned, may have a role in the production of ulcer. This type of patient may change and the opposite condition may occur

later in life, as a result of over stimulation of the sympathetic. It is the latter type of patient in which the ulcer symptoms develop or persist after cessation of the hyperacid secretion.

INTRA-ABOMINAL DISEASES. The relationship of chronic appendicitis and chronic gall-bladder disease, to ulcer of the stomach, has been pathologically demonstrated by Rousle and Lichtenbilt, and surgically by Moynihan⁽⁷⁾, and others. Some observers, among them Rosenow⁽³⁾, hold that the formation of the ulcer secondary to these pathological processes is due to infection, but Rousle, Von Bergman and Lichtenbilt believe that ulcer formation in these cases is due to local ischemia and erosion following motor disturbances in the gastric mucosa, as a result of sympathetic nervous irritation (Held)⁽²²⁾.

We might sum up our views in the matter, as Deaver⁽⁸⁾ has done in discussing pancreatitis, by saying that ulcer of the stomach "is the result of association with bad company within the abdomen." It is a common experience to find all the symptoms, fluoroscopic, chemical and physical findings of a gastric ulcer in the presence of the others of this triad.

PYLOROSPASM. The presence of pylorospasm is a clinical finding familiar to all of us in cases of gastric or duodenal ulcer. It may be one of the factors in the development of gastric ulcer, and certainly is one of the factors that delays its healing. We have been unable to explain pylorospasm in ulcer on the theory described by Pavlov and elaborated by Cannon⁽⁹⁾ that acid above the pylorus causes it to relax; acid below causes it to contract. McLeod⁽⁶⁾ has shown that one-tenth normal hydrochloric acid placed in the antrum of the pylorus has no effect upon the pyloric rim; the same placed in the duodenum had no effect. Luikart, Phillips, and Carlson⁽¹⁰⁾ have shown that the passage of chyme into the duodenum corresponds with the peristaltic waves. Wheelan and Thomas have made similar observations by a combined study of radiographic and graphic records. It would appear, therefore, that although pylorospasm is present in ulcer and is one of the factors both in the development of the ulcer and the chronicity of ulcer, we must look for some other explanation for the condition. Spencer, Myer, Rehfus and Hawk⁽¹¹⁾ have shown that a one per cent solution of sodium bicarbonate in a normal stomach re-

lieves pylorospasm and hastens the passage of chyme. We know that achlorhydrias empty rapidly.

DIAGNOSIS

To the practical physician peptic ulcer connotes infection, hyperacidity, spasm and pain, (Eustermann)⁽¹¹⁾. The typical pain of gastric ulcer coming on one to two hours after eating, relieved by vomiting and the alkalies and the taking of albuminous food, is too well known to you for me to spend any further time in the consideration of it from the clinical standpoint.

However, each symptom that a patient presents should be considered as a manifestation of an abnormal physiology; and the symptom, pain, being the one symptom that most frequently brings the patient to the physician, we should attempt to make a special effort to interpret it in terms of that abnormal physiology. McKenzie⁽¹²⁾ has shown that the stomach, small intestine, colon and appendix may be touched with hot and cold objects, burned with caustic or cauterized or cut with a knife, without producing the sensation of pain, and Hurst⁽¹³⁾ found in six cases of gastric ulcer, proved by subsequent laparotomy, that no sensation was produced by the introduction into the empty stomach of five-tenths per cent hydrochloric acid, one per cent butyric acid, one per cent lactic and one per cent acetic acid. Ginsberg, Tumpowsky and Hamburger⁽¹⁴⁾ working independently, and basing their investigations upon the previous work of Carlson, have shown that the pain of ulcer is coincident with extra deep peristaltic waves. Hurst⁽¹³⁾ has shown, by inflating a gastric balloon and causing distension of the muscles of the stomach, that he was able to produce a distress indistinguishable from typical ulcer pains. Carman has shown the same by roentgen examination. As a result of these investigations we must conclude that the old erosion, and mechanical irritation idea to explain pain, must be supplanted by the new; and that the pain of ulcer is largely a motor phenomenon.

McKenzie has shown that the disagreeable sensation we call pain is due to impulses transmitted from a diseased organ which though itself, is not the seat of the pain yet causes in the corresponding spinal segment a disturbance which is transmitted to the surface of the body through the cerebrospinal nerves, and is there recognized by the

individual as pain. This area may or may not be far distant from the diseased organ. The spinal segments usually affected in gastric disease are the seventh, eighth, ninth and tenth dorsal segments. Impulses transmitted to them from the sympathetic stimulate the impulses in the cerebrospinal nerves and the sensation is referred to the portion of the body supplied by these nerves, namely the skin from the ensiform cartilage to the umbilicus. This is known as the viscer-sensory reflex of McKenzie. If the disturbance is more marked the patient will have not only pain but an area of hyperaesthesia in this region. If still more marked the result is a contraction of the muscles of the body supplied by the nerves coming from these spinal segments, the viscera motor reflex of McKenzie. Or third, as a result of the pain there will be a hypersecretion, the viscerosecretory reflex of McKenzie, and fourth, if the pathology is great there will be in the spinal cord at this area an irritable focus which the patient will recognize as a painful spot.

The pain of ulcer does not shift by moving the stomach, as it would were it a local effect. It comes on one or two hours after meals, not because the acidity is highest but because the peristalsis is most marked at that time. Clinically, we recognize this by the wavy character and acid eructations into the esophagus—due to this peristalsis.

Alkalies and food relieve the pain of ulcer by lessening peristalsis.

VOMITING

The history of vomiting, at some time or other, is given in about 74 per cent of the cases of gastric ulcer. It is not one of the conspicuous symptoms, and when, in the record of any patient suffering from dyspepsia there is a history of frequent vomiting and inability of the stomach to tolerate the presence of food, some extra gastric condition should be thought of.

Vomiting, when it does occur, gives relief by emptying the stomach, lessening peristalsis and by lessening peristalsis relieves the pain.

HEMATEMESIS

Hematemesis is another symptom that is given as characteristic of ulcer; but the vomiting of blood and the presence of blood in the stool is found in only about thirty per cent of cases. In other words, gastric ulcer must be diagnosed in two cases out of three with-

out this finding. Moynihan⁽⁷⁾ states that, when bleeding from the stomach does occur, we must first think of splenic anemia, or cirrhosis of the liver.

GASTRIC CHEMISTRY

Much harm has been done by the statement that hyperacidity means ulcer. Smithies has shown in the analysis of five hundred cases that in only forty per cent was the acid concentration above the normal. In thirty-five per cent it was within the normal range, and in twenty-five per cent it was absent or markedly reduced.

Carlson, working at the University of Chicago, has made similar observations; and Rehfus⁽¹⁵⁾, Hamburger⁽¹⁴⁾, and others have demonstrated that pain is not uniformly present when the acidity is highest. In a number of ulcer cases a high per cent of the acidity fails to produce pain. If hyperacidity is a cause of gastric ulcer why do we have so many duodenal ulcers? Clinicians generally have been satisfied with the very plausible explanation of hyperacidity and hypersecretion as a cause of pain and as proof have administered alkalis with relief. Alkalis relieve the pain of gastric ulcer by lessening the peristalsis, and promote healing by putting the organ at rest. Joseph, by chymographic studies has shown that the Sippy treatment causes a marked reduction of gastric peristalsis and intragastric tension. Hyperacidity is probably one of the results of ulcer and not a cause.

METHODS OF TREATMENT MEDICAL

The cardinal principles of treatment should be:

1. Remove the cause.
2. Give physiological rest during the process of healing.

The emptying of the stomach does not depend upon gravity (Hewlett)⁽⁶⁾, nor can its good effect be the result of drainage; for Kelling⁽¹⁶⁾ has shown, by establishing a duodenal fistula after a gastroenterostomy, that most of the food still goes through the pylorus. Cannon and Blake⁽⁹⁾ have made similar observations.

Gastroenterostomy may aid by neutralizing gastric contents by the regurgitation of alkaline contents through the stroma (McVicar⁽²⁰⁾), but its main effect lies in lessening gastric peristalsis, and intragastric tension. It would seem that medical treatment

could obtain these same results at less hazard to the patient.

SURGICAL

Only three forms of benign gastric disease have an absolute indication for operation. First, complete pyloric stenosis; second, perforation, and third, severe hemorrhage. In all others the need is relative, not absolute. None of the surgical procedures restore a normal physiology and each is liable to complications, such as stenosis, jejunal ulcer, vicious circle, etc. One particular criticism that may be directed against the surgeon is that he has neglected the intelligent training of the patient in his after care (White⁽¹⁸⁾). He has paid too much attention to the mechanical and not enough to the psychic and physiological side of the patient.

We know that ulcer is cured by both medical and surgical means. We know that various types of medical treatment give approximately the same result, and we must attempt to correlate these empirical facts with physiology to get the answer to the problem in the case before us. In disease of such varied etiology and physiology there must be a therapy fitted to the case under study and to advocate any special therapeutic procedure for all cases is unscientific and unwise. It has been shown by McClure, Reynolds and Schwartz⁽¹⁷⁾ that the various food stuffs, carbohydrate, protein and fat, take approximately the same time to pass through the pylorus. So it is well not to confine oneself to a special dietetic regimen but satisfy the patient with cereals rather than disgust him with an exclusive milk-cream diet and *visa versa*. (Rehfus⁽¹⁵⁾).

The best argument for the non-surgical treatment is found in post mortem statistics. Ulcer is found in only one and five-tenths per cent of post mortems. It is well known that chronic ulcer may heal spontaneously or with little treatment. The failure of the usual medical treatment is due not to a wrong principle but to an inadequate effort.

CONCLUSION

The ideal has not yet been reached. Large gaps, which must be filled, still exist in our knowledge of the physiology of the stomach. When they are filled the patient with ulcer will be properly treated. Alvarez⁽¹⁹⁾.

The physiologist, the physician, and the surgeon must correlate various findings; pool their resources, and from this will come a

treatment based upon a thorough conception of the abnormal physiology present and avoid of the empiricism of the past.

BIBLIOGRAPHY

1. Smithies Quarterly Medical Clinics, April, 1919, 241-252.
2. Rost—Pathological Physiology, Blakiston, p. 68.
3. Rosenow. Journ. Inf. Diseases, 1918-19, 333-384.
4. Lehnhoff. Vol. 9, No. 268-271. Neb. State Journ.
5. Reeves. Surg. Gyn & Obs. April, 1920, 378-385.
6. Hewlett Path. Phys. of Int. Disease.
- 6A McLeod Physiology & Biochemistry in Modern Medicine, 4th Ed.
7. Moynihan. British M. J., p. 221. February, 1923.
8. Deaver. Meeting American College Physicians, 1923.
9. Cannon & Blake. Annals of Surg. 41—686.
10. Carlson. Control of Hunger in Health and Disease.
11. Eusterman. J. A. M. A., Oct., 1921. 1246-49.
- 11A Spencer, Myers, Rehfus and Hawk, Studies XII.
12. McKenzie. Symptoms and Their Interpretation, 4th Ed. Shaw & Sons, London.
13. Hurst. Monograph Guys Hosp. London, 1911.
14. Ginsberg. Tumpowsky and Hamburger, J. A. M. A., 1916. 68-990.
15. Rehfus. Progressive Medicine, 1922.
16. Kelling. Archives Fur. Klin. Chir. 1900, Vol. 62, p. 289.
17. Ophuls. Relation of Gast. and Duodenal Ulcer and Vas. Lesions, Archives Internal Medicine, 1903. 11-469.
18. McClure, Reynolds and Schwartz. Arch. Int. Med. 1920, XXVI 410.
19. White. Clinics of N. A. 1919. 1430-1454.
20. Alvarez. J. A. M. A., 1922.
21. McVicar. Annals of Clin. Med. Vol. 1, No. V, 332-33.
22. Held & Gross. Amer. Journ. Med. Sciences, 1922.

ADOLESCENCE GLAUCOMA*

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One of the conditions confronting the oculist, that at all times carries with it an extreme amount of anxiety, is glaucoma. I do not desire, in any way, to discuss the many various types of this disease, but rather to call attention to this one type of glaucoma that seems to me to be often overlooked and to have a fairly definite cause in at least a large per cent of cases. However, it is practically impossible to discuss one type of glaucoma without some reference to other types. Therefore, I have not hesitated to consider it generally when necessary. Glaucoma has so generally been considered a disease of middle or advanced age that very little mention is made in the literature of it affecting patients of the first or second decade of life.

Stellwag, Second American Edition, quotes Graffe as saying: "Fulminating glaucoma has been observed especially beyond the age of 55. In hereditarily disposed individuals, however, it occurs also at puberty. It always leads in a very short time, a few days or weeks, to glaucomatus, excavations and degenerative atrophy of the deeper parts of the eye."

Fuchs' late editions have not given even as much consideration to glaucoma as it affects the young. His description of hydrophthalmus can scarcely be classed as glaucoma even though it is presented as the glaucoma of

childhood. For in the same chapter he says, "It is a symptom of neuro fibromatosis multiplex which is a compound of a number of changes mostly congenital." Fulminating glaucoma, he says, "never occurs in childhood and but very rarely in youth. However, there are many families in which glaucoma is inherited." The fulminating type of glaucoma is only the violent form of the disease that appears to be given consideration. It is the more mild type that comes on slowly with a gradual increase in tension that is so easily overlooked. I have observed a number of young patients in their 'teens', the number of girls greatly out-numbering the boys, complaining of pain in their eyes and blurring of vision. They usually consider they either need a change of their glasses or new ones. The pupils are moderately dilated and react slowly to light. The tension is much increased. Much discomfort is felt after using the eyes, especially for close work. Ophthalmoscopically there is a slight pre-retinal hazy appearance, slightly pale nerve head and the regional vessels somewhat congested. Fundus changes vary with the various stages of the disease as in adult glaucoma. All symptoms being aggravated in girls at the time of menses. The diagnosis is further confirmed by the fact that contraction of the pupil with eserine or pilocarpine or gentle massage will relieve the symptoms.

*Read before the Lincoln Eye and Ear Society, March 24, 1924.

However, this does not remove the affection as is demonstrated by its return as soon as the myotic is discontinued. In attempting to find or explain the cause of this condition I have found little or no satisfaction in the literature. Reference has been made occasionally to the thyroid in relation to glaucoma; however, I have been compelled to consider this as only one of the causes. Sajous, 1923 edition of the Internal Secretions and the Principles of Medicine, probably furnishes us as reliable a study of glandular therapy as we have at our command at the present time. He considers, "The activity of any organ is sustained through the vasodilator mechanism whether belonging to the alimentary, circulatory, locomotor, visual, auditory, or any other system. Also this same vaso-motor mechanism is controlled by a nerve center located in the posterior pituitary body. From this center is controlled the activity of all the internal secreting glands." He also considers, "the principal or controlling glands are the thyroid, parathyroid and adrenals. That the same center that controls these organs also is the center through which all the bodies autoimmunizing functions are governed." Further, he contends, "Some investigators refer to the thyroid gland as an organ capable of governing certain functions. However, the facts show that the thyroid gland governs nothing. It is only a secretory gland governed as are all other glands by a nervous center to which its fluctuations of activity should be ascribed." Some experiments have been conducted to show the influence of the secretion of the adrenal glands upon the ovaries and testes. Some change has been found especially in the ovary following removal of the adrenals. The report of those carrying on these experiments would favor the conclusion that the ovaries were materially under the control of the adrenals.

My study of these conditions does not favor the conclusion that all the other secreting organs are under the influence of the thyroid, parathyroid or adrenals, but are primarily under the same center of control whether nervous or chemical and that each has its part to serve in the beneficial harmonizing of the workings of the human body. It is when one or more of these organs are not functioning properly that many of our diseases such as adolescence glaucoma are encountered. More especially am I convinced of this with its relation to adolescence glaucoma. For we see fewer cases of glaucoma

of any kind during the years the ovaries are most active and many cases of adolescence glaucoma subside after the normal activity of the ovaries is properly established. Each of the cases I have observed I have treated in two ways; the first, was symptomatic by the administration locally of myotics and massage to relieve the immediate tension. This has in each case given complete relief. The second mode of treatment was by the administration of iodine internally.

The dose given has not in any case been large; approximately one drachm of 2% solution of the salts has been given. The symptoms in each case so treated, have completely subsided in two or three days with no return as long as the iodine was given. Some of the cases so treated have had a return of symptoms after an extensive period without medication. However, the symptoms rapidly subsided upon the return to the referred medication. In attempting to explain the results obtained I have drawn the following deductions. Iodine is admitted to have a definite action upon the thyroid gland and, therefore, the stimulation of the thyroid either stimulates the ovarian secretion, or the same properties that act upon the thyroid also act upon the ovaries and other internal secreting glands. By the return of the internal secreting glands to their proper functioning by stimulation of the secretion of that unknown substance that in turn causes the various glands to function, the affection referred to the eyes is relieved. I am of the belief that the action is directly on the various glands and their secretion rather than indirectly through some primary agent. I am also of the belief that iodine, by stimulating to normal activity the functions of the internal secreting glands, assists the body in returning to normal metabolism. I have not as yet treated enough cases by the administration of mixed glandular extract to form a definite conclusion but those so treated have confirmed my belief that adolescence glaucoma is a sympathetic disease; a result of a deficiency of the internal secreting glands, especially the ovary.

Two cases each representing the extreme types may be of interest.

No. 1. A girl of 12 years, family history negative, complaining of blurring of vision, slight pain in and about eyes. Having been refracted under homatropine a short time before she considered her glasses needed changing. She accepted no change. Wearing plus .25 plus .37 axis 90 each eye. Vision at time of homatropine examination 20/15 and vision

at this time 20/20. She was told to care for her elimination. Urine normal, Wassermann reaction negative. Returned in about two weeks complaining of more discomfort, vision 20/25 each eye; blurry vision, pupil sluggish, fundus congested. Again given eliminants and told to return. Two weeks later: Vision, 20/40 more blurry, more pain. Tension decidedly increased; massage and eserine gave immediate relief. She was given a ½% solution of eserine and her parents were instructed to drop in eyes when discomfort was felt. She returned in one month, pupil contracted by medication, tension normal, no pain, vision 20/20 and clear. Medicine was discontinued with instructions to return if pain commenced. About three months later she returned, complaining of a return of symptoms that had been causing her a varifying amount of discomfort for about one month. Vision each eye 20/30. She was given eserine to drop in eye and iodine internally.

Three days later the eserine was discontinued. The iodine was continued for three months. Vision each eye 20/25, tension normal. At this time the iodine was discontinued with instruction to return if pain began. About six months later she returned, complaining as before, vision 20/30. The eye ball was gently massaged and she was again given iodine. One week later the tension was normal, vision 20/25. This experience was repeated three times at about six months intervals. Then she was directed to continue iodine indefinitely. It was continued at irregular intervals for six years with no return of the condition. When last examined, seven years after starting treatment and one year after discon-

tinuing medicine she accepted no change in her glasses. Vision each eye 20/25.

No. 2. Girl aged 14, family history negative, complaining of violent pain in right eye, some pain in left, commencing during the previous night. Pupil large, vision blurry—V 20/50-OD OS-V 20/30, tension increased. Massage and eserine relieved the pain. She was given iodine for three months. Vision returned to 20/20. She returned about one year later with the same history and much pain. The same treatment was again instituted with prompt relief. About one year later she returned with a milder attack. She was given iodine only and kept under observation, her condition gradually improved until one week later she was completely relieved. She has remained on iodine at irregular intervals for six years with no return of the condition, vision 20/25. She insists her eyes positively feel better when she is taking medicine.

CONCLUSIONS:

Adolescence glaucoma varies in severity from the most mild to the most violent types of the disease.

It is often times cured without treatment by return of the normal function of the body, especially the ovaries.

The destruction of vision is in direct proportion to the severity of the disease. Iodine and mixed glandular therapy offers our most efficient medication.

MULTIPLE PREGNANCY — WITH NOTES ON SIXTEEN CASES*

Arno A. Bald, M. D., Platte Center, Nebr.

Whenever the uterus contains more than one embryo we are dealing with a multiple pregnancy, and in accordance to the number of embryos present we have twins, triplets, quadruplets, or quintuplets.

There is some difference of opinion among our best authorities as to the frequency of multiple pregnancy. It is admitted, however, that twins are the most frequent and the averages are approximately the same. According to Edgar, twins occur once in ninety cases; triplets once in eight thousand; and quadruplets once in four hundred thousand. DeLee, who gathered literature on fifty million births, states that twins occur once in eighty-seven cases; triplets once in seven thousand one hundred and three; quadruplets once in seven hundred fifty-seven thousand; and quintuplets once in forty-one million six hundred thousand births. Sextuplets are rare, one authentic case being reported in which a woman at the fourth month of pregnancy gave birth to two female and four male children.

DeLee further states that multiple pregnancy is distinctly an abnormal condition and is likely to be repeated in the same family. According to my own records and observations, which extend over a period of eleven years I find that I have delivered a pair of twins each forty-seventh delivery, the cases being among Irish, Germans, Poles and English. I do not believe that multiple pregnancy is an abnormal condition, at least insofar as pathology or degeneration is concerned. Multiple pregnancy may produce pathology, but of itself is not pathologic. That multiple pregnancy may be repeated in the same family will be conceded, but in a large percentage of cases the trait is individual.

Twins may almost always be diagnosed during pregnancy, provided the patient is seen before the last stage of labor. In this day and age, however, our patients usually present themselves for examination and observation at the beginning of pregnancy, and the diagnosis is easy if the following points are remembered and looked for: First an unusually large and globular uterus; second,

*Read before Platte Co. Medical Society, June 10, 1924.

palpation of three large parts—two heads and one breech, or one head and two breeches; third, the distance between any two of the large parts being too great for fetus (30 c.m.); fourth, auscultation of fetal hearts having the following characteristics — (a) both asynchronous with maternal pulse, (b) asynchronous with each other, the difference being at least six beats, having counted a full minute six different times, (c) and being able to detect a difference in the tone of each fetal heart—this last procedure being very important to me; (d) there must be a free zone between the two areas of greatest intensity, but if one child is dead this will leave the examiner in doubt; fifth, palpation of two bags of water; sixth, palpation of one part in a bag after one bag has been ruptured; seventh, the use of the x-ray. Authorities state that it is rare to diagnose triplets or more before delivery.

As soon as a diagnosis of the multiple pregnancy is made the patient requires more watchfulness than is ordinary, especially as to the condition of the kidneys and circulation. The urine should be examined every seventh day, and the patient appear in person every two weeks for observation.

The course of labor may not differ greatly from that of single pregnancy, but the attendant should be prepared to cope with any of several conditions which may arise. The birth of the first child is usually prolonged due to over-distended uterus, and consequent long intervals between pains and their lack of intensity. At this point "watchful waiting" is the best caption as long as the part presents properly, there is no obstruction, and the heart sounds are clear and distinct. In a large percentage of cases both twins present by vertex, though there are many deviations. As soon as the first child is born the cord should be ligated and a second examination made relative to presentation of the second child. Up to this point in the course of management of labor of multiple pregnancy I consider it advisable not to use pituitrin or any other drug to increase the intensity of uterine contractions. However, if on your second examination you find all is well with the second child, and parts present properly, a dose of pituitrin may be given. This will hasten the arrival of the second child and tend to prevent hemorrhage following a long continued labor.

In conclusion I wish to state that in twelve of the sixteen cases occurring in my prac-

tice, there was no appreciable toxemia. In two there was considerable swelling of the lower limbs, and albuminuria. The remaining two I did not see until the first child was about to arrive. In eight cases each twin presented by vertex; in four cases first twin by vertex, second by breech; in one case both twins by breech; in two cases first twin by vertex, second by shoulder; in one case first twin by shoulder, second by vertex. In two instances the second child was dead. With an early diagnosis and close observation a successful delivery can usually be assured.

BULBUS SCILLAE AND SCILLA PRODUCTS AS HEART REMEDIES

Mendal has recently drawn repeated attention to the fact that the use of squills as a heart remedy is unduly neglected (See "Ars Medici" 1921, p. 51). Boden and Neukirch (Med. Klinik, Dusseldorf) have now made careful clinical and experimental tests with this remedy and find that the bulbus scillae actually contains a remarkable effective substance, rich in glucosides. The fact of its being almost forgotten as a heart remedy and of its being merely used as a diuretic from time to time is certainly due to its reduced efficacy when kept for any length of time. (The tincture scillae examined produced no effect whatever.) If, however, 0.3 of the fresh drug bulbus scill, maritimae or 3 scillaren tablets of 0.2 g. (Chem. Fabrik Sandoz. See "Ars Medici" 1922, p. 236) be administered daily, its action on cardiac insufficiency is excellent. In cases of myo-degeneratio cordis, the remedy produces better results than digitalis and strophanthin. In one case treated with scilla, auricular fibrillation subsided completely, although other cases remained unaffected. In cases of aortic lesion, the results obtained were good, but not better than with digitalis. In mitral lesions, and cardiac insufficiency consequent on kidney diseases, scilla proved to be useless Mendel's supposition that scilla causes "diastolic" action, as opposed to the "systolic" action of digitalis, and that it is therefore particularly indicated after excessive digitalis treatment or other systolic state of contraction, could not be confirmed. (D. Arch. f. klin. Med. Vol. 142, Nos. 3—4, 1923.)

Joshaway Crabapple says:

"The man who is all wrapped up in himself makes a very small package."

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THE AVERAGE VALUE OF A PHYSICIAN'S TIME

In the discussion of the disgraceful and unlawful practice of fee splitting, the matter of the payment by somebody of the value of a physician's time while accompanying a patient to the hospital, or to a city consultant and attendance at an operation, at the request of the patient or of his relatives or friends; or the proper fee for the local doctor who makes a prompt diagnosis and arranges for an operation at the home of the patient and assists at that operation, has been neglected.

It is self-evident that when people requisition a physician's time they must, if responsible, expect to pay for the time. Friendship does not pay a physician's office rent, cloth his wife nor feed his children. The modesty of the average medical man and the lack of business ability of perhaps 80% of physicians is largely to blame if he is not properly compensated for services such as those above outlined.

When a physician is taken away from his field by a patient he should charge the patient for the average value of his time plus necessary expenses while away. If the average value of that time is twenty-five dollars a day, that sum should be the fee.

Arranging for an operation at the home of a patient and assisting at such an operation sometimes becomes the doctor's responsible duty. What should he charge? The writer made it a life-long practice to charge a lump sum of fifty dollars for such a serv-

ice and nobody ever complained about the size of the fee. The physician can furnish a portable operating table and other conveniences and supervise the general preparation of the rooms and earn his fee.

To just the extent that the general practitioner asserts himself by showing his generalship and proves his usefulness to his patron and patient he will be appreciated and likewise will need worry less about getting a slice of the surgeon's fee.

BLOOD TRANSFUSION IN SHOCK

The ease with which blood transfusion may be carried out has popularized transfusion in various diseases, the result being in a great part beneficial. Sufficient time has elapsed since the beginning of its widespread use to judge the merits in the several pathological conditions where it has been applied. In certain of the chronic anemias the results have been at least doubtful, but there is a class of cases in which the procedure has been dramatic in its success, namely shock and hemorrhage. The term "shock" is here used to designate the syndrome of low blood pressure, rapid thready pulse, reduced alkalinity, and the accompanying symptoms which occur following severe trauma. With an understanding of the physiology of shock it is not difficult to explain the benefits from transfusion. The work of Cannon, Cattell, the British Investigation Committee on Surgical Shock, and others indicates that the process occurs in the following manner: When the tissues are injured by severe trauma there is released into the blood stream a toxic substance which is identical with histamin in its action. This substance causes a perfusion of blood plasma and to a lesser extent red blood cells through the capillary walls into the tissues. The result is a diminished volume of blood in circulation. The rate of contraction of the heart increases and the arterioles become constricted in an attempt to maintain the blood pressure at a normal level. The diminished volume of blood and the vasoconstriction result in a reduced alkalinity in the tissues. The brain and heart at the beginning do not suffer as great a loss in blood since these vital organs are not supplied with vasoconstrictor nerves. After a time the vasoconstrictor mechanism fails and there is now a complete collapse of the circulation, with rapid degeneration and failure of function of the heart and brain.

In the early stages of shock while the

blood pressure is not below 80 or 90 mm. the administration of morphin, saline solution and the application of heat may arrest the progress of the symptoms. But when the blood pressure has remained at 70 mm. for more than an hour or the pressure continues to fall below 70 mm. there is little chance for recovery, as Bayliss has shown. To be successful blood transfusion should be used before this stage is reached. With the first symptoms of shock a suitable donor should be selected by matching the blood directly with that of the patient. This will avoid unnecessary delay if transfusion becomes necessary. The simplicity of the citrate method of transfusion has made it the procedure of choice, and with the use of proper instruments and strict observance of the proper technique there is usually no difficulty in its performance. Soon after the transfusion is started there is a striking change in the color of the patient. The pulse which has been imperceptible becomes full and slower in rate. What a few minutes before appeared to be a fatal outcome is now changed to a more than hopeful prognosis.

With the better understanding of shock the value of restoration of the blood volume is being more and more realized. For this purpose there is no completely effective substitute for blood. Saline solution disappears from the circulation very soon after it is introduced, and glucose solution remains but little longer. The nearest substitute is gum acacia solution because of its colloidal nature, and this has the disadvantage of difficulty in preparation and of not supplying the deficiency in red blood cells.

—Joseph A. Weinberg.

THE WHITE BLOOD CELL COUNT IN ACUTE ABDOMINAL CONDITIONS

Several years ago John B. Deaver, speaking before the American College of Surgeons, said: "In the acute abdomen let the exact diagnosis await the revealing power of the mighty scalpel". Dr. Finney of Baltimore in discussion related in facetious style an experience with an acute abdomen wherein he had relied upon the "mighty scalpel" for the diagnosis and discovered a "slightly inflamed appendix, not bad, oh no, and yet not entirely normal" and much to his chagrin the patient presented on the following day a beautiful case of measles.

Deaver's paper was a masterpiece on the "acute abdomen" and Finney's discussion,

though replete with witty epigrams and garnished with ludicrous personal experiences contained much of a serious and instructive nature but neither credited the leucocyte count with its deserved valuation.

Is the value of the determination of the number of white blood cells in many conditions, and especially in the acute abdomen, fully appreciated?

It is thoroughly taught and retaught in every medical school. It could provoke no argument or even discussion in any medical society. No one denies its value and still it is as the religion that is preached but not practised. Neither is it only the older ones of the profession who are supposed to be less impressed by such methods—a supposition resented by the ablest of them. On the contrary many of our younger men are neglectful of it. The criticism applies not alone to men of smaller communities and restricted facilities but I have observed its neglect by men of large communities where every convenience was at hand.

Recently in consultation with a physician and surgeon who had treated a patient with Hippocratic facies, marked abdominal tenderness and distention and a large area of rigidity and dullness over the lower abdomen, I inquired about the leucocyte findings, the reply was "I have not made a count — I wanted to get the patient in a hospital where that could be done." The patient, a previously vigorous young woman with the responsibility of a 2 year old child, died soon thereafter. The onset of her trouble was appendicitis. Her death was preventable and would not have resulted had a leucocyte count, a five minute job, been made the first or second day of her illness. A hospital was unnecessary for that. All that was required to save a human life was \$10.00 worth of paraphernalia and a wee bit of energy. More recently a young lady was referred to me on the 5th day of her illness during which time the preceding physician had "suspected appendicitis". No leucocyte count had been made. Both of these patients resided in a city of 75,000 inhabitants with many laboratories available and willing workers at hand but the value of the leucocyte count was not adequately appreciated.

Not long ago a fine strapping 22 year old boy was seized with cramps, fever, abdominal tenderness, etc., on Tuesday. He lived in the country. The diagnosis was ptomaine

poisoning. The next Sunday after typical signs and symptoms of peritonitis supervened on a gangrenous appendix, consultation was requested. An appreciation of the value of the white-cell count would have pointed out the error of the diagnosis five days earlier.

These are unfortunately not unusual instances. Every year a toll is taken of not inconsiderable number for lack of early check on possible appendix cases by the leucocyte count.

There is no single symptom or sign nor group of symptoms or signs as dependable as the leucocyte count to determine the diagnosis. When the leucocyte count is 15,000 or above, in an acute abdomen, pus is present. The exception to this rule is so rare as to be negligible. The idea sometimes stated, "that the leucocyte count is low in gangrenous appendix", I have never found true. Perhaps more unnecessary surgery is being done in the right iliac fossa than in any other region of the body. Easy submission to surgical intervention is secured through fear inspired by the denouement in neglected cases of appendicitis. Subsequent recurrence of symptoms in cases with faulty diagnosis is a source of just criticism of surgical practice.

With the leucocyte count as a guide the physician can take his position with assurance and persist in "watchful waiting" with implicit confidence in safety to the patient if the count is low or can as consistently insist upon surgical care when there is an increase above 15,000.

It would be a splendid commendation of the general practitioner and a real saving of human lives if every case referred to a hospital for surgical intervention in acute abdominal cases came in accompanied by a report on leucocyte findings.

—Clarence Emerson.

CAN BABY CONTESTS BE MADE MORE EFFICIENT?

As the time for the state and county fairs approaches we are confronted with the questions—How much benefit are the mothers and children receiving from the baby contests? How can they be improved so that the maximum good will be obtained? The basic purpose should be helpfulness and an earnest endeavor to correct underlying nutritional and physical defects.

The tendency in the past has been to see

these children at a time when the damage is quite apparent and the child will carry some effects of the early nutritional errors throughout its life. Comparatively little effort has been put forth to have these children examined under a year of age. Simple questions as to the intervals and kind of feeding, sleep, clothing and fresh air are of paramount importance at this age and have a very distinct bearing on the nutritional well-being as the baby grows. The value of breast milk for her baby has not been sufficiently brought to the mother's attention. Simple statements as to the proper clothing and sleep have not been dwelt upon. Too many mothers as well as physicians are under the impression that woolen undergarments are a necessity and that a double thickness should be worn across baby's chest.

These errors have no place in the physical examination nor are they entered on the card provided, yet the greater part of the child's physical and nutritional mal-development is directly traceable to deviation from simple habits of food, clothing, sleep and fresh air, and an opportunity to explain this in detail to the mother should be provided so that repetition will not occur.

The awarding of a prize often is unfair. An instance may be cited. A small per cent is deducted because of scars or scratches on a child's foot or legs. These scratches are the result of going barefoot, and the mother is quite apt to go away with the impression that healthy barefoot days are harmful. Manifestly this is an improper method of marking and explanations are quite necessary.

These contests have become so popular and the registrations so heavy that the examining physicians have only sufficient time to grade the child according to the chart provided. The physical examination must, therefore, be rather hurried, and little time can be given to explanations and remedies. Another physician should be in attendance who could carefully go over with the mother the various markings on her chart explaining the child's physical defects and suggesting remedies. A step in advance has already been established in the improvement class which has been in vogue at some fairs for the past year or two. In this class the child is graded according to the improvement made during the year.

The present baby contest is a marked im-

provement over the old "baby show" when the prize was given merely for beauty. Now, if in addition to our scientific grading, we could give to the interested mother advice and explanation, we would be offering something of real value.

—Floyd S. Clarke.

EDITORIAL PARAGRAPHS

How lonesome we would be if we did not have the weather as a subject of daily comment.

Thirty-six million pieces of pie are consumed in the United States daily. Hence, gastro-enterologists.

The danger of confusion of vocation and avocation is well illustrated in the following address on a letter received recently: "Meridian Highway Medical Journal, Madison, Nebr. Attention Mr. F. A. Long, Vice-Pres."

The Board of Trustees of the A. M. A. announce that on the retirement of Dr. George H. Simmons as Editor and General Manager, Dr. Olin West, Secretary, will become Acting General Manager; Dr. Morris Fishbein, Acting Editor of The Journal, and Mr. Will C. Braun, Acting Business Manager.

All of us have been taught to take our medical religion from the American Medical Association and its publications. We have at different times swallowed doses we did not relish, just because we thought we ought to do so. We read in "Principles Which Govern", allowable advertising among other things — "3. Extravagantly worded copy or sweeping superlative claims are subject to revision or rejection." And then we turn to Hygeia for June and read "Iodostarine Chocolate Tablets will prevent goitre", and "Hay Fever Prevented with Pollen Antigens." * * But then, this editor lives at "Main Street" and — well, what can you expect?

Not along "cocktail-duodenitis", but also "murderous morons" was added to our vocabulary at our annual state meeting.

Twenty-six former presidents of the Nebraska State Medical Association are living, all but three in Nebraska.

According to a ruling of the medical examining board of Nebraska, alien physicians must take out first citizenship papers and to be able to pass an examination in the English language before being allowed to take an examination to practice medicine in Nebraska.

The secretary of the American Medical

Association announces that while Nebraska has over 1200 physicians members of the Nebraska State Medical Association, but 708 are subscribers to the Journal of the American Medical. One reads between the lines that the secretary feels that 500 Nebraska physicians are derelict in their duty to the A. M. A., and to the Journal of the A. M. A. But then, Dr. West may not know what a wonderful Journal we have in Nebraska

WELL DONE, THOU GOOD AND FAITHFUL SERVANT!

The members of the Nebraska State Medical Association who were acquainted with Miss Anne Erixon, business manager of the Journal for the last 3½ years and office assistant to the secretary-treasurer for 4½ years, will be glad to look upon



Mrs. Anne Erixon-Hardy

her face again as Mrs. Charles Hardy, Independence, Kansas. The wedding occurred in Omaha, June 6, 1924.

Anne Erixon was born in Omaha, attended Central High school and began to work in the Journal office for the late Dr. J. M. Aikin, just one year before the latter's death. In the rearrangement of the Association activities Miss Erixon was made business manager of the Journal, a position which she filled very ably and to the entire satisfaction of the publication board.

The history of The Nebraska State Medical Journal would not be complete without this slight token to one who has helped make the Journal what it is today.

"THE POOR BOY IN MEDICINE" — FOR THE LAST TIME

Editor Nebraska State Medical Journal:

I have the June Bulletin of the A. M. A. It contains an address "The Poor Boy In Medicine", by

Walter L. Niles, Dean, Cornell University Medical College, New York, which was delivered at the thirty-fourth annual meeting of the Association of Medical Colleges held in Omaha, Feb. 28-29, Mar. 1, 1924. Evidently this paper is published as educational propaganda. The author elicited considerable newspaper comment at the time it was read. His speech was used for an editorial in the Lincoln Star. This editorial was later published in The Nebraska State Medical Journal. Recently space in The Nebraska State Medical Journal was accorded a prominent medical educator for defense of this same address. I have the honor to be one of those "undesirable poor boy doctors" and ask, that inasmuch as this address is now published by a national medical Journal, the privilege of discussing it in The Nebraska State Medical Journal.

A careful analysis is necessary to discover the subject of the thesis. The result of this analysis is the assumption that more students are applying for entrance to medical colleges than can be accommodated, that some process of elimination is necessary and that the basis of elimination is MONEY. The author's reasons for using this basis is startling to say the least. He states that the poor boy is seldom an outstanding figure. This is a bald statement without evidence submitted to support it. He has great concern for the health of the poor boy, but offers no comparative data between the rich boy and the poor boy, being satisfied with the assertion. He precludes imagination in the poor boy. What is imagination? What is the basis for this assertion? Who has the greater imagination, the rich man's son who, faultlessly attired, attends the "opening game" of the season, or the poor man's boy, who with a rag and wrapping-twine fashions a ball, with a stick for a bat and with his sand lot cohorts "plays the game"? Who has the greater imagination, the rich man's daughter with her Parisian doll or the poor man's daughter with a stocking stuffed with rags called a doll? His assertion is not a fact. The formidable handicap of poverty is another charge against the poor boy. He evidently reasons that because a man might have done better work with money it must follow that he does poorer work than an inferior student with money, which is not only fallacious but a dangerous doctrine. The charge is made that the poor boy seldom attains an average grade and is undesirable for hospital internship. This is a combination of an assertion without presenting evidence and an ex cathedra opinion. He states that the "Interest" that is of "most importance" is the "MEDICAL SCHOOL", not the student nor the public whom he is to serve, but the "MEDICAL SCHOOL". What is the purpose of the Medical School? It is not an end in itself. At best it is only a means to an end, which is Service to the race. By this service I do not mean advancing medical science to that extent that the medical school develops scientists. What would be more futile than scientists teaching science for no other purpose than to produce scientists? We must not lose sight of the reason for the existence of science. Science is not merely an intellectual gratification for the few. Its purpose is bringing to bear on the problems of humanity the things which the human race require. The principal function of the Medical School is the production of medical practitioners

whose mission is to alleviate human suffering. Does the rich man's son have a better understanding of human suffering than the poor man's son? We read further that culture and refinement seldom go hand in hand with poverty. He assumes that because an environment of poverty does not give outward evidence of culture and refinement that the boy coming from such an environment is incapable of acquiring culture and refinement. The prime purpose of education is the acquisition of culture and refinement. The medical school is presumably an advanced educational institution. The poor boy is to be ostracized because he lacks a background of "good breeding". The doctor fails to define "good breeding". I ask him to do so and to set forth the relationship between heredity and "good breeding". We learn that the poor boy is apt to possess commercial instincts. If commercial attributes are to be condemned, it is a strange logic which suggests that commercial attributes are not found with the commercially successful. Who are the idealists of America? Are they crowded into the inner circle of the rich? Who were the idealists in the years of 1917-1918? Were they confined to the profiteers who gained the inner circle of war contracts while the common boy struggled onward at Chateau Thierry, Belleau Woods, St. Mihiel and the Argonne? Who were the idealists at the close of the World's War at the council table of the Nations? The statement that the great need of the medical profession is honesty of purpose, right thinking and sound leadership is a welcome diversion. Why mar this beautiful sentiment with contradictory statements? What is the matter with the honesty of purpose of the poor boy who seeks a medical education? On what basis does he stand condemned? Is honesty of purpose allocated to the rich? The author does not define "right thinking". Assuming that he means idealistic thinking, what proof is there of a lack of idealism in the boy who in order to acquire an education, is willing to forego not only pleasure and luxury but often necessities to achieve his goal? And as to "sound leadership" will the author kindly name fifty of the outstanding leaders in fifty different vocations that we may know who he lists as "sound leaders"? Who are the leaders in the industrial, political, educational and professional field today? Are they the sons of wealth? Are Schwab, Ford, Babson, Reynolds, Calvin Coolidge, General Pershing, Bryan and a hundred others that might be named "leaders"? Were they the offspring of rich parents? Were Lincoln, Grant, Carnegie, Jim Hill, Woodrow Wilson, John B. Murphy, Whitcomb Riley, Mark Twain and hundreds of others, outstanding figures in our national history, sons of rich men? Leadership presupposes the faculty of overcoming obstacles. What environment affords greater obstacles to overcome and develop leadership than poverty? He assumes without proof or argument that honesty of purpose, right thinking and sound leadership are absent in the poor boy. What a vulnerable position for a medical leader to take!

I submit the entire history of the human race which stands as irrefutable proof of the fallacy of the assumption.

—Czar C. Johnson.

FORMER ILLINOIS DOCTORS

Will any and all doctors, former residents of Illinois, or descendants of pioneer physicians of the "Illinois country", communicate at once with the Committee on Medical History, Illinois State Medical Society, No. 6244 North Campbell Avenue, Chicago, Illinois?

Under the sponsorship of the Illinois State Medical Society there is in preparation "A History of Medical Practice in the State of Illinois" that must go to the printer at an early date. In order that this volume may be accurate and complete, all possible assistance is asked from every source, as to personal data and experiences, including diaries, photographs and similar documentary mementos of pioneer Illinois doctors and of progressive phases of medical practice, as well as of achievements in fields other than those of medical science. Prompt return in good condition is promised for anything loaned the committee.

The scope of the volume will range from the discovery of Illinois to modern times. Through this period of over 250 years there is much of thrilling interest to be detailed. Collection of the human interest data can come only from the families or closest friends of the pioneers, many of whom long ago removed to distant sections of the United States. Through the kindness of editors of various medical journals, it is hoped to reach those who may be able to loan valuable material to the compilers who guarantee careful guardianship of anything sent for publication.

Some of the subjects touched will be: Physicians accompanying early explorers; government surgeons and physicians in attendance at the forts; early medicine in Illinois; theories of healing from the days of the Aborigines through the mound-builders; French and English explorers; the ante-boundary days; sporadic settlers; medical attendants for the covered wagon; herb doctors; primitive surgery; medicine and missionaries; migration of pioneer physicians to new territory; the circuit-riding and "saddle-bag" doctors and their burdens, triumphs and perils; pioneers as "utility citizens"; Illinois men in war time — there are four conflicts to be considered since the opening of the Nineteenth Century; Illinois medical men away from medicine, i. e., in industry, in science, in belles-lettres-art, music and literature.

Photographs especially are desired. Also copies of letters, statements of "cures" and "new methods", diaries and the like.

MEDICAL SOCIETY OF THE MISSOURI VALLEY

The annual meeting, which will be held in Des Moines, Iowa, September 17, 18 and 19, under the presidency of Dr. H. J. Lehnhoff, promises to be a record-breaker in attendance, if the interest manifested by members from all over the territory is to be taken as indicative. Every day the secretary is receiving letters of inquiry regarding the program, which, as we previously announced, would contain a number of surprising features. The program committee headed by Dr. Donald Macrae, has not made any definite announcement, except to state that four interesting symposia upon subjects of outstanding interest were being prepared. Hospital clinics will be held on the first morning, while a series of diagnostic clinics will be arranged for

Thursday and Friday mornings. The entire program promises to be so diversified and enlightening that no one can afford to miss it, whether he be general practitioner, surgeon, internist or in special practice. Headquarters, meeting place and exhibit will be at the Hotel Fort Des Moines. Dr. J. W. Martin is the general chairman of arrangements; Dr. Granville Ryan, director of clinics.

THE SOCIETIES

The spring meeting of the Republican Valley and Tenth Councillor District Medical Society, was held in Minden, May 29th, at the court house. The rain limited the attendance, only 25 being present. It was, however, one of the best meetings in the history of the society.

The program, which was a symposium on Focal Infections and Local Infections Causing Chronic Systemic Symptoms, follows:

"Conditions Following Infections of the Rectum", Dr. Hal C. Smith, Franklin; "Conditions Produced by Infections of the Prostate and Seminal Vesicles", Dr. F. G. Brewster, Holdrege; "Focal Infections Simulating Pulmonary Tuberculosis", Dr. W. I. Devers, Upland; "Diagnosis of Focal Infections Produced by Nose and Sinus Diseases", Dr. E. C. Foote, Hastings; "Diagnosis of Focal Infection Produced by Diseases of the Throat", Dr. E. I. Whitehead, Holdrege.

Following the business meeting in the forenoon, Dr. H. Hapeman of Minden, read a very interesting case report of Pancreatic Abscess which elicited lively discussion. The next meeting will be held October 30th at Hastings.

The twenty-third semi-annual session of the Sioux Valley Eye and Ear Academy was held at the Fontenelle Hotel in Omaha on June 30, 1924. The officers of the society are: Dr. S. A. Keller, Sioux Falls, South Dakota, President; Dr. C. H. Fox, Kearney, Nebraska, Vice-president; and Dr. F. H. Roost, Sioux City, Iowa, Secretary.

Beginning at 9:30 in the morning, Dry Clinics were held at the Hotel, interesting cases being shown by Doctors J. M. Banister, H. B. Lemere, J. B. Potts, J. M. Patton, and H. Gifford and discussed by them and other members of the society. At the same time, a demonstration of eye cases by the corneal microscope with slit lamp illumination was carried out with the assistance of Dr. Robert Von der Heydt of Chicago, a guest of the society for the day. These cases included tuberculous keratitis, results from cataract, recurrent erosion of the cornea, secondary glaucoma and interstitial keratitis. Dr. E. J. Curran of Kansas City was also a guest of the society.

A luncheon was held at the University Club for the visiting members by the local eye, ear, nose and throat men. The regular program was carried out at the afternoon session and was as follows:

"Anaesthetics in Head Cases", John E. Stansbury, M. D., Cedar Rapids; "Erysipelatus Necrosis of the Eye Lids", Harold Gifford, M. D., Omaha; "The Contributions of the Slit Lamp to Our Knowledge of Anatomy—the Diagnosis, Pathology and Prognosis of Ocular Disease", Robert Von der Heydt, M. D., Chicago; "What Are We Doing for Our Chronic Head Cases?", James C. Tucker, M. D., Beatrice; "Glaucoma—General Outline of Experiences with Irridotomy and General Conclusions Summarized,"

E. J. Curran, M. D., Kansas City; "Preliminary Report on the Traumatic Deafness as a Result of Retraction of the Condyles of the Mandibles," J. C. Decker, M. D., Sioux City; "Treatment for Venous Angiomas of the Face—Preliminary Report", F. H. Roost, M. D., Sioux City.

Much interest was shown in the papers which were freely discussed. A banquet was held at 6:30 after which Dr. Robert Von der Heydt showed lantern slides of the crystalline lens, demonstrating some of the numerous forms of lens opacities which may be seen with the slit lamp. Dr. H. B. Lemere read a paper on the "Parasympathetic Nervous System of the Head with Special Reference to Pain." After the papers some of the members visited the Ak-Sar-Ben den as guests of the Omaha club.

About forty members attended the meeting. This is about an average attendance at the summer meeting but includes only a small number of the eye, ear, nose, and throat men practicing in Nebraska, Iowa, and South Dakota who are eligible for membership in the society. The meetings have always proved of great interest to those who have attended them and it is hoped that an increasingly large number will attend the meetings and apply for membership in the society.

—S. R. Gifford.

HUMAN INTEREST TALES

Dr. Leonard Swanson, has located in Hastings.

Dr. P. A. Reed, a recent graduate, has located at Union.

Dr. and Mrs. E. N. Smart, Madison, are visiting at Los Angeles and environs.

The Dr. A. P. Condon cottage at Lake Manawa was ransacked and robbed recently.

Dr. C. C. Johnson and family, Lincoln, enjoyed a motor trip to northern Minnesota in July.

Dr. C. L. Egbert, Hastings, was reported seriously ill at St. Joseph, Mo., hospital recently.

Dr. and Mrs. C. A. Hull, Omaha, have returned from a sojourn of several months in California.

The marriage of Dr. F. A. Paden, Hartington, and Miss Elizabeth Oberlander, Coleridge, is announced.

Dr. and Mrs. T. D. Thompson, West Point, celebrated their fiftieth wedding anniversary, June 22.

Dr. P. H. Salter, Norfolk, was a member of a fishing party on the northern Minnesota lakes in July.

Dr. Olga Stastny, Omaha, has gone to London as delegate to the International Medical Women's association.

Dr. Andrew Sinamark, formerly of Fremont and Omaha, has located at Hibbing, Minn., in the OALR specialty.

A fellowship in the study of group medicine has been offered to students of the University of Nebraska College of Medicine by the DeCourcy clinic, Cincinnati.

The new \$250,000 Good Samaritan Hospital at Kearney was officially opened with appropriate exercises July 23.

Dr. and Mrs. F. A. Long, Madison, left in mid-July for a short visit at Tacoma and other north-west coast points.

Dr. C. L. Hooper of Mantor, Kan., has located at Madrid, succeeding Dr. R. A. Young, who has located at Tucson, Ariz.

Dr. Frank Tornholm, Wahoo, took his family to South Bend, Indiana, for a visit, while he takes postgraduate work in Chicago.

Dr. C. P. Charlton, Palmyra, is taking postgraduate work in Boston and Dr. J. H. Thompson, Monroe, is installed as locum tenens.

Dr. Inez C. Philbrick, Lincoln, was elected counselor for Nebraska of the National Women's Medical association at the recent Chicago meeting.

Physicians in the country tributary to Scottsbluff have inaugurated a system of listing deadbeat, slow-pay and laggard customers for mutual information.

Dr. Louis E. Moon, Omaha, presented a paper before the American Proctologic Society in New York, based on his experience on Sacral Anaesthesia.

The state department of health reports an increase during the last year in mortality from diphtheria and circularizes the profession in an endeavor to stamp out the disease.

Dr. J. D. Wilson, formerly of Broken Bow, has gone to Thermopolis, Wyo., to take charge of the Hamilton hospital, an institution maintained by several oil companies.

Dr. W. J. Reeder is to succeed Dr. Ernest Thelen at Cedar Rapids, Nebr. Dr. Reeder has already located at Cedar Rapids and Dr. Thelen is to leave for California about September.

Before the state board of medical examiners, the cases against Drs. A. A. Larson, Gurley, Dr. A. B. Madison and George Angus, Omaha, involving questions of moral turpitude, were dismissed.

NECROLOGICAL

Dr. William A. Peterson, Elgin, Nebr.; Rush Medical College, 1886; for thirty-nine years a druggist and practicing physician at Elgin, died June 23, age 65.

Dr. John B. Fulton, Beatrice, Nebr.; the last of the pioneer physicians of Gage county, died July 10, aged 92.

BOOKS RECEIVED

THE SCIENCE AND ART OF ANESTHESIA. By Col. William Webster, D. S. O., M. D., C. M. Cloth. Pages, 214 with illustrations. St. Louis: C. V. Mosby Co., 1924.

TREATMENT OF COMMON DISORDERS OF DIGESTION. By John L. Kantor, Ph. D., M. D. Cloth. Price \$4.75. Pages 245 with illustrations. St. Louis: C. V. Mosby Co., 1924.

NEW AND NONOFFICIAL REMEDIES, 1924, containing descriptions of articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1923. Cloth. Price, postpaid, \$1.50. Pp. 422+XXXIX. Chicago: American Medical Association, 1924.

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1923. Cloth. Price, postpaid, \$1.00. Pp. 72. Chicago: American Medical Association, 1923.

"All social reforms begin in somebody's dream of better conditions. The world's dreamers have been for the most part its benefactors."

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CONTENTS

	Pages		Pages
Treatment of Pelvic Inflammations in the Female, Robert T. Frank, A. M., M. D., F. A. C. S.....	333	Conditions Produced by Infections of the Prostate and Seminal Vesicles, F. A. Brewster, M. D.....	367
A New Anesthesia for Use in Major and Minor Urological Operations — Preliminary Report, by Oswald Swinney Low-ley, A. B., M. D., F. A. C. S.; Everett E. Angle, A. B., M. D.; and Charles W. Hooper, A. B., M. D.....	341	A Pus Case of Undetermined Origin, H. Hapeman, M. D., F. A. C. S.....	368
Parkinsonian Syndromes, Harrison A. Wigton, M. D.....	345	EDITORIALS—	
Post-Operative Parotitis, Chas. F. Heider, M. D.....	349	State Medical Leagues.....	370
Mastoiditis and Its Complications, R. D. Martin, M. D.....	352	Mental Disease and Crime.....	370
Focal Infections Simulating Pulmonary Tuberculosis, W. I. Devers, M. D.....	356	Misuse of Insulin.....	371
Conditions Following Infections of the Rectum, Hal C. Smith, M. D.....	360	Intravenous Therapy.....	372
Focal Infections of the Nose and Throat, E. C. Foote, M. D.....	363	A State Medical Circulating Library.....	372
Diagnosis of Diseases from Focal Infections of the Throat, E. I. Whitehead, M. D.....	365	Paradoxical Shortening of the Coagulation Time of the Blood After In- travenous Administration of Sodium Citrate.....	373
		Editorial Paragraphs.....	373
		Wayside Gleanings on a Mid-Summer Jaunt.....	374
		Medical Society of the Missouri Valley.....	374
		Tri-State District Medical Association.....	374
		The Societies.....	374
		Human Interest Tales.....	375
		Necrological.....	376
		Books Received.....	376

TREATMENT OF PELVIC INFLAMMATIONS IN THE FEMALE*

Robert T. Frank, A. M., M. D., F. A. C. S., Denver Colo.

Few people, and this includes medical men, realize the enormous loss in birthrate, the economic loss from illness and the loss of life caused by gonorrhea and puerperal infections throughout the world. In this country alone 20,000 deaths a year are due to puerperal sepsis. For every death there are at least 10 to 15 women who recover. The gynecologist rarely sees women in the acute stages of gonorrhea, but much of his work consists in attempting to counteract the residues of infection. You should, therefore, realize that the subject I will now discuss is a vital problem for the community.

The field that I am attempting to cover is a large one. I shall deal chiefly with the sub-

ject of treatment. In passing I must, however, mention the types of inflammations encountered, their mode of development and extension, the method of diagnosis to determine the stage and pathologic changes involved, in order to base treatment on a rational foundation.

TYPES

The greatest number of pelvic infections are due to gonorrhea, pyogenic involvements (post partum or post abortum) running them a close second. Tuberculosis accounts for about 5%, while actinomycosis and syphilis are much less frequent. Lesions at the outlet and vulva due to granuloma inguinale, ulcus molle, esthiomene, are of little importance in our present theme.

*Read before the Twelfth Councilor District Meeting, Alliance, Nebr., June 2, 1924.

PATHOLOGY

I have tried to present the point of entry, the mode of extension, the distribution of lesions and permanent loci of infection as seen in gonorrhea and pyogenic pelvic infections, in the accompanying charts in order to give, at a glance, a graphic picture of the pathology, both in the acute and chronic stage.

The diplococcus of gonorrhea, a gram negative capsulate form, gains its foothold in the urethra and cervix during coitus, or more rarely in children, by contact. Only in children is the process mainly a vulvo-vaginitis. The bacteria often localize early in Skene's paraurethral glands and in the Bartholinian duct at the vulva, and in the cervical glands above. Growth is mainly along the surface

setting up an acute pelvic peritonitis. This stage represents the stormy acute type.

As body resistance increases the gonococcus vanishes from the urethra, it is rarely found in the vagina and only transiently in the uterus. The chronic type, over an indefinite period, shows active and infective foci in Skene's ducts, Bartholinian and cervical glands. Residua, usually sterile, remain as pus-tubes or hydrosalpinges, Bartholinian abscesses and pelvic adhesions.

The pyogenic bacteria, most commonly a streptococcus or staphylococcus aureus, or mixed infections, make their entry into the puerperal genital tract during or after partus and abortion. Only rarely, through dirty instrumentation, such as repeated "office dilatation" of the cervix, is the nonpuerperal uterus infected, because, in the non-pregnant state, the huge cavernous venous enlargement of gestation (seen in Chart II) is lacking.

As shown in chart II the pyogenic

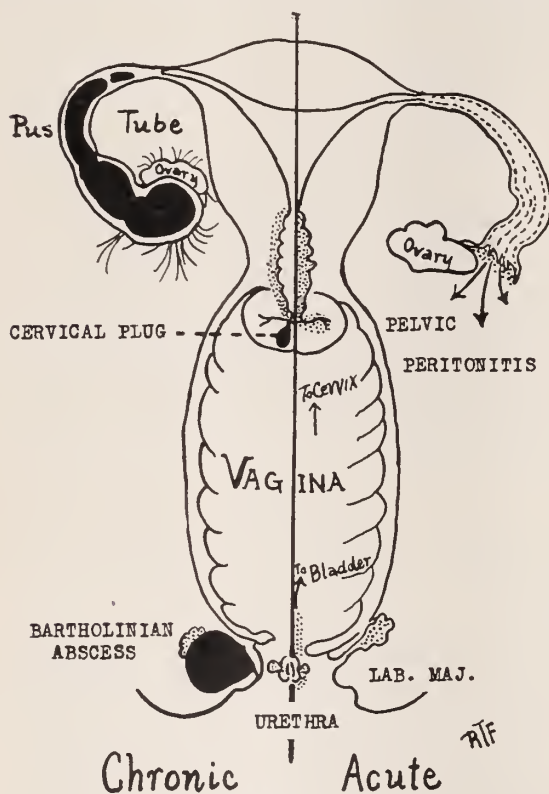


CHART I

The right half of the diagram illustrates the points of entry and methods of extension in acute gonorrhea. Infective foci are shown by stippling.

Note foci in urethra, Bartholins ducts, external os and cervical canal. Extension along tube and spilling through abdominal ostium occurs during menses.

To left is shown the condition in chronic gonorrhea. Infective foci are found in Skene's ducts and cervical glands. Pus, often sterile, is present in Bartholins duct, cervical plug and pyosalpinx. Ovary and tube are bound down by adhesions.

of the genital tube. Usually at the time of a menstruation the uterine mucosa is acutely involved and from there, by continuity, the Fallopian tubes are reached, infected, and gonorrheal pus poured out through the abdominal ostium onto the pelvic peritoneum,

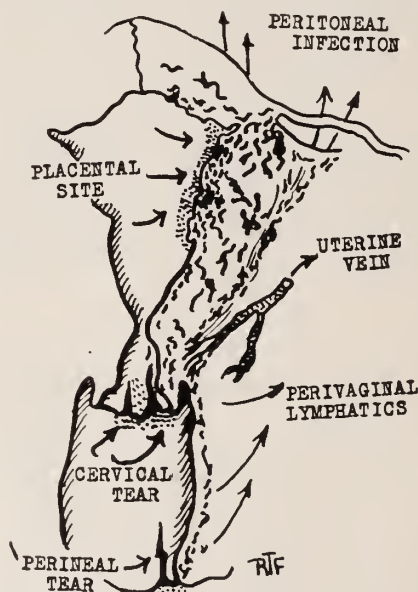


CHART II

Puerperal genital tract. Points of entry are through perineal and cervical tears and placental site. Extension occurs through lymphatics to cellular tissue and peritoneum through veins and rarely through arteries.

bacteria make their entry through breaches in the epithelial covering, mainly where perineal, vaginal and cervical abrasions or tears offer a portal. The placental site, with its loose thrombi, affords a ready ingress to the venous system. As every puerperal vagina and uterus, after the first 24-48 hours, harbors swarms of bacteria, every puerpera would sicken if all the bacteria were virulent and if the body resistance were

abolished. But only if many virulent bacteria find ready entry and the body fluids are impotent does infection take place.

As shown by chart III, progression

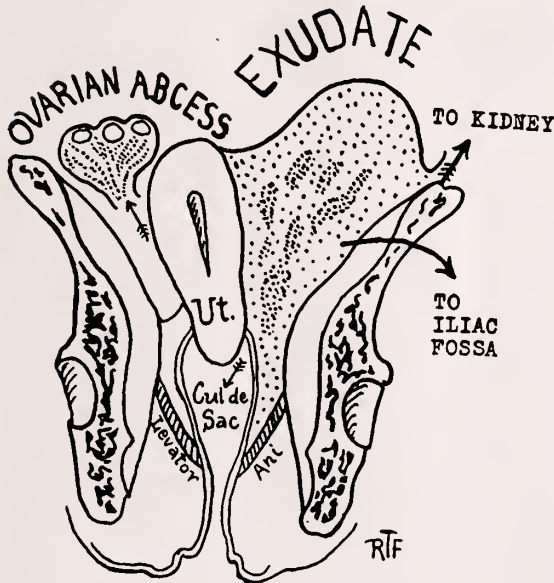


CHART III

Sagittal section of pelvis passing through posterior wall of uterus. A large cellular exudate is shown on the left side of the pelvis. There are central abscesses which may point through the posterior cul-de-sac, in the iliac fossa above Poupart's ligament or burrow upward and reach the kidney.

can occur through the lymphatics producing a lymphangitis, which may spread through the pelvic cellular tissues with consequent cellulitis, or, in more virulent types, penetrate to the peritoneum and cause a rapid, fatal, diffuse peritonitis.

Especially at the placental site, penetration of the veins takes place, a thrombophlebitis is set up, fragments of infected thrombi are washed away and, wherever deposited set up pyemic foci at distant locations (Chart IV). More rarely the bacteria gain entrance into the thicker walled and more resistant arteries, and, if the body resistance is overcome, multiply in the blood stream and cause rapidly fatal bacteremia (streptococcus mainly).

The picture is further complicated by the fact that not infrequently lymphangitic, phlebitic, cellular and even arterial infections co-exist in the same patient.

If the infection is not hyperacute, localization takes place and cellular abscesses may develop. This is a favorable prognostic sign. Even in pyemia an abscess may presage recovery. The common sites of pelvic exudates and abscesses are shown in charts III and IV. The ovary may be infected by way of

the lymphatics entering its hilus and a virulent ovarian abscess develop. A peritonitis, but very exceptionally only, in contrast to the regular localization of gonococcal peritonitis, may localize in the pelvis. Throm-

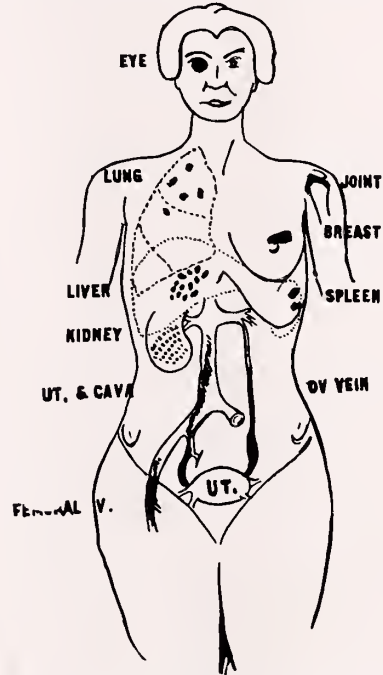


CHART IV

Shows infective thrombi in right femoral, and uterine veins. In the left ovarian vein and in the vena cava. The commoner sites of embolic abscesses are indicated.

bophlebitis and even bacteremia are sometimes overcome when the resistance improves.

Tuberculosis, except in regions such as Colorado, where health seekers congregate, is usually an accidental find because the primary lung or intestinal focus may have healed. Tubal masses (pus tubes) are usually present with ascitic, fibrous, or caseous peritoneal involvements. Uterine and cervical foci are less common and vulvar lesions exceptional.

Syphilis, except in the primary or secondary stage (vulva and cervix) plays but a small role in the present discussion⁽¹⁾.

Actinomycosis may produce obscure, widespread pelvic infection, sooner or later leading to external fistula formation. The disease is usually secondary to intestinal actinomycosis.

TREATMENT

This introductory clears the deck for a discussion of the treatment of gonorrhea and pyogenic infections which must be discussed separately.

GONORRHEA

The history and symptoms may prove of some service in making a diagnosis. In many instances the onset, in a woman, passes unnoticed. In every case both for record and legal protection spreads should be taken from the urethra (no urine passed for at least two hours previously) by milking downward from the bladder to the urethral meatus. Spreads from the cleansed cervix, taken from within the canal are also made. Vulvar and vaginal spreads are of use only in children. A gram stain will show a gram negative, intracellular, biscuit shaped diplococcus to be confused only with the micrococcus catarrhalis which is usually smaller, and more lanceolate in form.

In acute gonorrhea⁽²⁾, if no acute salpingitis has developed (enlarged and tender tubes, signs of peritoneal irritation), the patient, if this is in anyway feasible, is put to bed for at least 7 - 10 days. The diet should be bland and plenty of fluids taken. Usually urotropin gr. V, t. i. d., with a like quantity of acid sodium phosphate, dissolved in one-half glass of water is prescribed. If this is not well borne I change to salol gr. V t. i. d. The bowels are kept open with mild salines and the patient is warned of the possible danger of infecting the rectum by means of enemas.

Caution as to infecting the eyes, the danger of spreading infection by towels, utensils and coitus must be emphasized in every case. If the patient does not appear to realize her responsibility to the community, a threat of reporting her name, instead of merely giving her case number, to the health authorities has a wholesome, sobering effect.

It is essential to give as many local treatments as is possible between the time of onset and the next menstruation, because, if the cervical infection can be brought under control before onset of the menses, an acute gonorrheal endometritis followed by tubal infection, may be forestalled.

Daily, therefore, unless acute lower abdominal pain develops, or the temperature by mouth is elevated above 99.4°, I give a local treatment. The patient is told to urinate into two glasses. If the second glass remains clear no bladder involvement has taken place. The urethra is milked through the vagina. A smooth, sterile, cotton-tipped applicator (cotton secured by dipping the applicator into celloidin solution before wrapping the cot-

ton) moistened with 2% mercurochrome (solution renewed every week) is passed with a slight rotating movement to the neck of the bladder, left in place for 1 - 2 minutes, or until slight burning develops, and is then withdrawn while light counter pressure is made with a finger in the vagina. This little maneuver serves to press out and empty any paraurethral glands.

A speculum is next introduced into the vagina and the cervix exposed. Profuse vaginal secretion is lightly sponged away. Without grasping the cervix, a fairly large cotton tipped applicator, likewise dipped into 2% mercurochrome is introduced until arrested at the internal os⁽³⁾. Alongside the first, additional smaller applicators, drenched with the mercurochrome, are introduced until the cervix will accomodate no more. From 2 - 4 may be used. The pressure developed serves to force the antiseptic dye into the glands and likewise serves to empty the glandular crypts more completely. The application is continued for at least five minutes. Then the portio vaginalis and the entire vagina is swabbed with the dye.

Every morning the patient takes a cleansing douche (plain water or 1 - 2000 bichloride, no lysol). Twice daily a hip bath (not in the bath tub, but in a sitz-bath or foot tub) of hot water (105° - 110°) is taken for 5 - 10 minutes unless this produces severe pelvic pain. No napkin, but closed drawers may be worn.

After one week, I usually substitute 5% argyrol in the urethra and 25% in the cervix instead of the mercurochrome. If the bladder shows cystitis I irrigate with weak permanganate (1 - 10,000) or instil and allow to be retained one to two ounces of argyrol 5%.

At the onset of the first menses after infection, the patient must go to bed. She has been given tablets of 1/200 gr. of atropine and instructed to take from 1 - 4 tablets daily until the throat becomes dry and accomodation slightly interfered with. The atropine quiets tubal peristalsis. Codeine tablets of 1/2 gr. dose are also prescribed with instruction to take a tablet for cramps and pain. All local treatment is stopped during the menses.

If the menses pass without symptoms, the treatment, as out-lined above, is continued until urethral and cervical spreads no longer contain gonococci⁽⁴⁾. If coitus is resumed,

it must be condonatus over a long period, after both partners have been shown to be gonococcus free, otherwise the chronic to-and-fro marital infection is sure to be continued indefinitely.

In a large percentage of cases, during menstruation, abdominal pain, elevation of temperature (100° - 103°) and vomiting document a tubal and peritoneal infection. If first seen at this time, with pain mainly on the right side, the differentiation from appendicitis is not easy. At this stage absolute bed rest, restricted diet (mainly water and gruels), ice bag to lower abdomen and, by rectum, codeine-belladonna suppositories (codeine gr. $\frac{1}{2}$, ext. belladonnae gr. $\frac{1}{8}$) are called for⁽⁵⁾. The inflammation regularly localizes in the pelvis within a week and becomes subacute. Enlarged tubes may be felt, and quite rarely a peritubal Douglas abscess may develop and require evacuation by posterior vaginal section. Laparotomy at this stage is inexcusable. Too profuse bleeding may be controlled by styptol gr. $\frac{3}{4}$ t. i. d.

When the temperature has returned to normal for a week, and all abdominal pain has disappeared, local treatments may be resumed.

Cases which develop gonitis or wrist joint involvements may be given a polyvalent gonococcus vaccine. This is the sole indication in which I have found a specific vaccine useful⁽⁶⁾.

In infants, irrigation of the vulva with weak permanganate solution, and instillation of 5% argyrol into the vagina by means of a ureter catheter, if long enough continued, proves effective⁽⁷⁾.

Properly treated cases, in which treatment has been started early, and faithfully kept up, and in which reinfection has been avoided, clear up early as far as urethra, Skene's ducts and cervix are concerned. Bartholinian abscess may develop and require first evacuation and later excision (under local anesthesia). Tubal involvement, if it has set in, may go on to pyosalpinx formation, but these pyosalpinges most usually encapsulate and become bacteria free and sterile.

The most trying cases are the chronic ones which have never been rendered quite symptom free, in which husband and wife reinfect each other, or where prostitutes spread the infection broadcast.

The drop of pus from Skene's ducts, from the Bartholinean openings, the muco-puru-

lent cervical plug may show many, or only a few gonococci. Enlarged, low, adherent tubes afford additional evidence. By patience and prolonged treatment many of these patients may be rendered symptomless and non-infectious⁽⁴⁾.

Skene's glands are obliterated with silver stick fused onto a fine wire or split open with the knife or the cautery. Bartholinean retention cysts are excised. The mucous plug may be dissolved from the cervix, without producing undesirable trauma, by means of a moistened cotton-tipped applicator, dipped into bicarbonate of soda powder, left in situ, for a few minutes. Then a solution of 10% silver nitrate may be introduced on another applicator.

In very resistant cases, after vainly using mercurochrome, argyrol 25%, iodoform gauze dipped in 1 - 1000 bichloride of mercury solution or silver nitrate in the cervix over long periods of time, I apply the fine electro-cautery making 4 - 6 linear incisions from internal to external os and repeating in two weeks. This maneuver serves to obliterate many of the infected glands. Parenchymal injection of pure alcohol, intracervical radium applications and "coning" out of the mucosa have been advised, but I have had no personal experience with these measures.

Under no conditions is a curettage justifiable. It will relight tubal infections and may set up a crippling pelvic cellulitis.

What measures should be employed to relieve the tubal disease, the pelvic adhesions, the accompanying fixed retroversion and flexions and the attacks of pelvo-peritonitis has long been a debatable question. My experience embraces the period of indiscriminate operation in the acute and subacute stages, the era of so-called "conservative reparative" operation, of which resection of the ovary and salpingostomy is an example, and the present tendency to medical treatment of adnexal trouble.

We are generally agreed not to do more than to open pelvic abscesses from below in the acute and subacute stages. Even now, some occasional operator, not versed in the literature of the subject, ventures to publish a series of indiscriminately operated cases.

The consensus of opinion favors conservatism in the treatment of chronic adnexal disease. Relief from new attacks by prolonged, hot douches (b. i. d. two gallons, lying posture, duration 15 minutes), by abdominal hot

air baths daily (15 - 30 minutes, temperature 125° - 250° F.) unless a febrile reaction is induced, by care of the bowels, by eradication of foci in the cervix and below, as detailed, can be obtained. The body resistance may be increased by subcutaneous introduction of foreign protein (milk, horse-serum, typhoid vaccine). If adhesions, in very old and inactive cases, prove symptom producing, pelvic massage (modified Thure-Brandt), or Trendelenburg posture with mercury laden colpeurynter in the vagina, often relieve pain and discomfort.

When dealing with patients in comfortable circumstances, a well regulated life, a day's rest in bed during the menses, and the medical measures just advised, will usually tide the sufferer over a year or two until symptomatic recovery is complete, though the genital tract remains permanently crippled (Sterility). Working women with large dependent families, "floaters" whose occupation shifts with seasonal variations and who withdraw from treatment as soon as the exacerbation has been relieved, cannot be thus relieved. They require more radical intervention. Even here I refuse to operate until 6 - 12 months after the initial infection has passed. Then when I operate, a radical removal is performed. Only rarely can the uterus be spared. Fundus and cervix should be removed, as well as both tubes. Occasionally, in young women, an ovary can be left behind. My motto is "if you operate at all, be radical". Hence, I refrain from opening up young girls. Less radical operations are followed by no relief, or even exacerbation of symptoms, due to stump exudates and new-formed adhesions.

PYOGENIC INFECTIONS

In treating this phase of the subject we are dealing with far more varied and less readily diagnosed conditions. Hence my exposition necessarily will be less dogmatic. The main point to keep in mind is that, when in doubt, be not rash and do no harm!

Prophylaxis should be the proper treatment for puerperal sepsis, but statistics show that the maternal death rate from this cause has not decreased during the last 20 years. Preparation of the patient (including an interdiction of coitus after the seventh and one-half month of pregnancy), avoidance of meddling midwifery and a carefully conducted puerperium are essentials⁽⁸⁾. Retention of membranes, or even of small pieces of the

placenta, if no hemorrhage forces one's hand, is less dangerous than introduction of the hand into the uterus. But if it is necessary to enter the uterine cavity, the safest time to do so is immediately after the child has been born (fresh towels, fresh gloves, good asepsis!).

Fortunately very rarely, as in scarlatina, erysipelas or hyperacute streptococcus invasions, an overwhelming of all factors of resistance may occur. Within 12 to 24 hours, chill, high fever and a rapidly spreading peritonitis supervene and death occurs within the first week. Such cases are often confused with perforation of the uterus. I know of no means of saving them, as even if the gravity of the condition is recognized, early hysterectomy usually proves unavailing.

Infections developing 3 - 7 days post partum are the most frequent. When symptoms appear (fever, chill, lessened lochia, etc.), a careful examination must exclude infection of the breast (tender lumps, axillary glands), pyelitis (pus and bacteria in urine, kidney tenderness, very high W. B. C.), pulmonary complications (acute tuberculosis! pneumonia), sore throat or other intercurrent disease. If no definite and conclusive evidence of extra-genital trouble can be elicited you may feel sure that the genital tract is at fault. Do not then make extensive pelvic examinations, do not douche the vagina and uterus! If you have conducted the labor properly you know that the uterus is empty and you know what injuries of cervix, vagina and perineum have occurred.

I act somewhat as follows. Inspect perineal sutures. If the wound is covered with greyish exudate, sometimes without this merely on suspicion, I remove all sutures, reopen the wound widely and paint it with dilute (3%) tincture of iodine, covering the raw surface with 5% iodoform gauze. An insufficiently contracted, subinvolved, uterus calls for ergot gtt. 30 t. i. d. and for an ice bag to the fundus. This will serve to squeeze out clots. Severe pain requires opiates. The diet should be fluid but nutritious. Complete rest, with exclusion of meddling relatives, an abundance of fresh air and, if necessary, stimulation are indicated.

At this stage no one can make an anatomical diagnosis and hence no one can safely prescribe more than such symptomatic treatment as has just been outlined. Whether a given case will prove to be a slight, transient,

unimportant derangement or whether lymphangitis, thrombophlebitis or bacteremia will develop is as yet impossible to determine.

Defervescence and return to well-being document the harmless light invasions.

Continuation of high fever, a climbing pulse, delirium, and dry tongue make the outlook grave. Such patients are treated like any serious general disease.

At this stage examination may show tenderness in the paravaginal tissues (sign of lymphangitis). If, later, exudates develop, the outlook is improved. When the exudate breaks down into abscesses these should be drained through the vagina (posterior vaginal section) or extraperitoneally above Poupert's ligament if they point in that location.

Strandlike extensions from the cervix to pelvic wall may prove to be infected lymphatics. Only if a protracted course, repeated chills and a negative blood culture make a pelvic thrombophlebitis likely can excision of the pelvic veins be considered⁽⁹⁾.

"Milkleg", on the other hand, offers a far better prognosis. Patients suffering from phlegmasia alba dolens must lie for weeks with the affected limb or limbs elevated, wrapped in cotton, and the extremity must be neither massaged or moved until the danger of loosening a thrombus has passed (two weeks of normal temperature as a minimum).

Pyemic thrombophlebitis with pus foci in the lungs, liver, spleen or kidney is of gravest significance. If the abscesses can be recognized and drained, at least transient relief may be obtained. I have seen recovery after panophthalmitis, after multiple joint and subcutaneous abscesses were evacuated. Usually the bacteria then proves to be the staphylococcus. Phantastic treatments such as intravenous injections of collargol or bichloride of mercury have been advocated⁽¹⁰⁾. Specific vaccines have proved ineffective. Open air and sustaining treatment aided by good nursing save some of these patients.

Acute bacteremias, recognized by petechiae, active endocarditis and positive blood cultures are extremely fatal. There may be no local signs in the pelvis, in fact the absence of all localization is suspicious. All specific treatments have proved valueless. Streptococcemias almost all die, an occasional staphylococcemia recovers after long illness.

Infrequently, a tubo-ovarian abscess develops in connection with a pelvic lymphangitis. Leave such adnexal inflammation un-

touched for months, and then operate only when no temperature elevations occur. Laparotomy is very dangerous during the acute stage.

Late Infections, 7 - 14 days post partum, are usually less severe than those of the preceding group and after the tenth day are most often gonorrheal (latent, unsuspected gonorrhea flaring up during the puerperium). The treatment does not differ from that of the preceding group. After the puerperium is passed the gonorrhea will require long continued treatment. The sequelae usually produce sterility after gonorrhea, while even the severest pyogenic infections may not impair future fertility because the process may be unilateral.

You will doubtless notice that I make no mention of intrauterine douches and curettage. Only exceptionally is sepsis due to retention of gross particles. Moreover, intrauterine manipulation, nay the mere fixation of the cervix by a volsellum and downward traction on the uterus, may break up adhesions, make a breach in the protecting leucocytic wall, or disturb healing sufficiently to convert a self limited local infection into a progressive general invasion. As we cannot determine just what condition we are dealing with let us follow the advice of our forebears in medicine to do no harm (nil nocere!).

In puerperal infections, therefore, if our honest efforts at prophylaxis have failed, we must try to sustain the patient until localization and increased body resistance have overcome the invasion. We must limit our interventions to the opening of pus foci, to the prevention of mechanical dissemination of emboli and to like measures.

The opinion concerning the treatment of infected abortion has also undergone much change since I, in 1913⁽¹³⁾, advocated non-intervention as first insisted on by Winter of Koenigsberg. Routine "emptying of the uterus" in the presence of fever is no longer countenanced. Personally I prescribe bed rest, ergot and waiting. Quite rarely a dangerous hemorrhage makes delicate emptying of the uterus unavoidable (ring clamp, no curette). The subsequent treatment, depending on the grade and type of infection, does not differ from that of the infected puerpera at term. Criminal abortions, in addition to sepsis, may be complicated by gross lesions due to trauma, such as perforation of the

uterus, avulsion of intestine, etc. Such complications must be recognized and at once require appropriate measures.

Tuberculosis of the genital tract most often passes undiagnosed, is operated upon as a simple tubal infection, and is then recognized by the pathologist on section. Where peritoneal tuberculosis complicates the picture, the ascitic type is often spotted. Evacuation of the peritoneal exudate, double salpingectomy and appendicectomy may permanently cure in patients free from other foci. The fibrinous and caseous forms occur more often in connection with advanced tuberculosis, and may be complicated by ilio-cecal involvement. In these types, rest, nutrition and heliotherapy is preferable to operation⁽¹²⁾. The multifiform, dense adhesions render operation tedious and difficult, and fistulous tracts which produce rapid progression of the disease, develop post-operatively.

Actinomycosis is very uncommon. If potassium iodide in large doses does not bring on improvement, careful exploration and excision of sinus tracts may help materially. Complete cure is infrequent as the disease usually is widespread.

I have tried to make clear that careful diagnosis of the character and stage of the disease, frequent reexaminations in order to recognize changes, occurring during the course of the treatment, minute attention to details of therapy, scrupulous abstention from blind meddling or possibly harmful maneuvers is essential for success. I have also tried to emphasize, that operative interventions are less frequently called for than commonly performed. Our hope for the future in order to limit the two scourges — gonorrhea and puerperal infection — should be directed toward the education and enlightenment of the public in regard to venereal infection on the one hand, and toward elevation of the standard of midwifery on the other.

FOOTNOTES:

(1) Frequently excessive bleeding in syphilitic women is regarded as of syphilitic origin. There is no evidence substantiating this view. Even if anti-syphilitic treatment relieves the men- and metrorrhagia, the luetic origin of the uterine bleeding is not proved.

(2) In what follows, in a somewhat dogmatic fashion, I outline methods of treatment which proved effective in my hands. Each man, according to personal convictions and experience, advocates modifications of his own. My effort has been to em-

phasize the dangers, pitfalls and causes of non-success.

(3) A small applicator involves the risk of passing through the internal os and perhaps infecting the endometrium.

(4) Spreads should be examined weekly after the acute stage is passed. Not until for three successive months cervical and urethral spreads show no gonococci, when taken immediately after menstruation has ceased, can we speak of having reached a non-infective stage.

(5) The anal region should be scrubbed with soap and water to cleanse it of discharge, before introducing the suppository.

(6) Fortunately, but very rarely, a pyemic type of gonococcus invasion may develop with foci in joints, tendon sheaths, kidney and even endocardium. Such patients may die of the infection. A latent tuberculosis may be lighted up during an attack of gonorrhea both processes running a severe course because of the lowered resistance.

(7) Few mothers prove competent to carry out the treatment. The physician must ordinarily make the instillations.

(8) Among possible sources of infection may be mentioned the tub bath during the later months (substitute sponge or shower bath) and vaginal douches. During labor, neglect to shave the vulva, unnecessary vaginal examinations, "breaks" in asepsis during the period of waiting after scrubbing up, and contamination from the rectum during the perineal stage of delivery, are common sources of trouble.

(9) The enthusiasm which greeted the advent of ligation and resection of thrombosed pelvic veins has evaporated because the percentage of patients whose life can be saved is so small.

(10) Recently Young of Baltimore has suggested the intravenous use of mercurochrome and gentian violet.

(11) Frank, R. T. "Contraindications, to Cureting", New York Medical Journal, April 19, 1913.

(12) Actual sunlight or the quartz mercury vapor lamp.

FOOD RESTRICTION LOWERS BLOOD-PRESSURE

Selman (Ohio State Medical Journal, December, 1923) believes adequate food restriction carried on for sufficient length of time will lower the blood-pressure in a given majority of cases of hypertension and those patients whose pressures are not brought to normal are rid of their distressing symptoms and the danger of apoplexy. Another advantage is that patients are not made invalids and their activities curtailed. The diet should be so ordered that the excretion of salt is less than 0.5 gm. daily.

"Faultless people are usually self-labeled, and are among the hardest of earth's population to live with."

A NEW ANESTHESIA FOR USE IN MAJOR AND MINOR UROLOGICAL OPERATIONS — PRELIMINARY REPORT*

By Oswald Swinney Lowsley, A. B., M. D., F. A. C. S.; Everett E. Angle, A. B., M. D.; and Charles W. Hooper, A. B., M. D., New York.

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It is our plan to carry out a progressive study with various preparations in order to find, if possible, a water soluble, relatively non-toxic, non-irritative and antiseptic local anesthetic which will be as effective as cocaine when applied to the mucous membranes.

Successful local anesthesia made its first important advance in 1884 when Koller introduced cocaine as a practical local anesthetic. He demonstrated that by the instillation of a 2 per cent cocaine solution the eye could be made sufficiently insensitive to carry out many operations without pain. Koller's discovery soon proved of great value in laryngology and rhinology where operations could be more exactly performed than with general anesthesia. Within the next few years the use of cocaine was common in all branches of surgery. It was employed for terminal or infiltration anesthesia to anesthetize the terminal nerves in the field of operation; for regional, conduction or block anesthesia by injecting the solution into and around nerve trunks; and finally, for intraspinal anesthesia, by injecting the solution directly into the spinal canal.

It was early recognized that cocaine was a dangerous therapeutic agent. The great number of mild, severe and fatal cases of cocaine poisoning observed following the generalized use of the drug led to an intensive chemical study with a view to discovering other substances which would be equally efficient as local anesthetics without the serious by-effects of cocaine. It was found that the anesthetic property of cocaine depended upon the esterification of the basic alcohol methyl-econine with benzoic acid. As a result, many derivatives of benzoic acid have been discovered which have the properties of a local anesthetic. Among those introduced into practice may be mentioned tropacocaine, beta-eucaine, stovaine, alpin, novocaine, and butyn. Novocaine, the least toxic of this entire group, was prepared by Einhorn and introduced into the practice of medicine by Braun in 1905.

A number of other types of substances have been investigated as local anesthetics: Holocaine, a phenetidine derivative used in

ophthalmology, apothesine, a cinnamic acid derivative, chlorotone, a number of phenols, vanilline, saponine and many other substances. Macht, in 1918, called attention to the anesthetic properties of benzyl alcohol. Hirschfelder, 1920, investigated the anesthetic action of other aromatic alcohols and states that out of this series saligenin or salicyl alcohol is the best and least irritating.

Another group of benzoic acid derivatives, insoluble in water, namely the alkyl esters of amido-oxy-benzoic acids and the alkyl esters of amido-benzoic acids, have been described, which possess more or less strong anesthetizing properties when in direct contact with exposed nerve ends. They contain no basic group which is capable of forming neutral water soluble salts. Owing to their insolubility in water and tissue fluids they cannot penetrate the intact skin or mucous membrane and they cannot be used in surgery where a water solution of the drug is to be injected into the tissues. The use of these compounds has, therefore, been limited to direct application to wounds, ulcers, burns, rhagades and excoriations, where there may be exposed nerve ends. The amido-oxy-benzoic acid esters were developed by Einhorn, who prepared more than forty different esters all of which showed anesthetic properties. From this series orthoform, the methyl ester of m-amido-p-oxy-benzoic acid, was introduced into practice. Of the p-amido-benzoic acid series anesthesin or parathesin, the ethyl ester, is the best known. Many other esters of this series have been made and their possible number is limited only by the number of alcohols which can be esterified.

It has been found by one of us that water soluble preparations or compounds of the water insoluble alkyl esters of the amido-benzoic acids may be prepared by dissolving the alkyl esters of the amido-oxy-benzoic acids and the alkyl esters of the amido-benzoic acids in aqueous solutions of the aldoses, either the monosaccharides or the disaccharides having a functional aldehyde group, such as glucose, lactose and maltose.

The aldose preparation which we are at present reporting is prepared by dissolving

*Read before the American Urological Association, New York Society, November 28, 1923.

12 grams of the ethyl ester of p-amido-benzoic acid and 12 grams of the methyl ester of m-amido-p-oxy-benzoic acid in a sufficient quantity of a 40 per cent dextrose syrup to make 100 cubic centimeters. For the convenience of the clinic ampules containing 5 cubic centimeters were prepared and the preparation has been designated experimentally as 24 per cent anetin No. 1 in forty per cent dextrose. The contents of the ampules may be diluted with water to give solutions of any desired strength. The dilute solutions are sufficiently stable for practical use.*

TOXICITY

It is well known that the toxic action of the local anesthetics is exerted only after the entrance of the drugs into the blood stream. Therefore, the most accurate method of determining the relative toxicity of the various local anesthetics is to determine the maximal toxicity of each after intra-venous injection. For this purpose we have adopted a test based upon the official method used by the Hygienic Laboratory, United States Public Health Service and the manufacturers to determine the toxicity of salvarsan and related products before they are released for distribution. The Government selected the rat for this test because the results obtained seemed to be more constant than with other experimental animals. Furthermore, on account of their small size a large number of rats can be kept conveniently under uniform conditions of diet, weight, etc., and as a result more animals can be used for an individual test. We have applied a modification of this technique for the determination of the maximal toxicity of the benzoic acid derivatives used as local anesthetics and have found the results obtained are very accurate and correspond very closely to those obtained with the cat by Professors Hatcher and Eggleston.

TECHNIQUE OF THE TEST

Healthy, non-pregnant albino rats weighing between 100 and 150 grams were employed. The rats were obtained from one source and were kept on a constant diet for at least two weeks before the tests. They were fasted for from 16 to 20 hours immediately before the injection of the drug, when they were weighed and the doses administered per kilo body weight. Water was supplied during the fast period. A two per cent solution of the drug in distilled water was injected into the saphenous vein at the rate of 12 to 15 seconds for every 0.1 cubic centimeter. At least five rats were injected at each

dose. The animals were kept under observation for twenty-four hours, during which time they were fed the routine diet. The minimal dose at which any of a series of animals died is considered the maximal

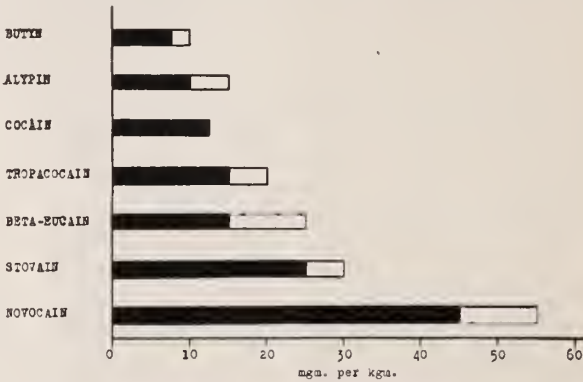


Chart I. A quantitative comparison of the toxicity of the benzoic acid derivatives used as local anesthetics. Rats injected intravenously. Maximal tolerated and minimal lethal doses in milligrams per kilo body weight.

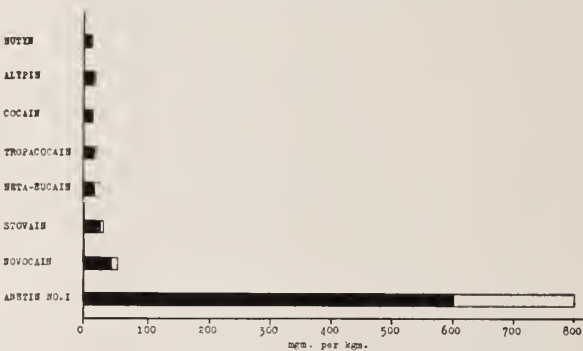


Chart II. A quantitative comparison of the toxicity of anetin No. 1 and the local anesthetics in Chart I. Rats injected intravenously. Maximal tolerated and minimal lethal doses in milligrams per kilo body weight.

tolerated dose. The dose at which the majority of a series died is considered the minimal lethal dose.

The abscissae represent the number of milligrams

TABLE I
COMPARATIVE VARIATION IN THE TOXICITY RESULTS OBTAINED IN THE ALBINO RAT AND CAT AFTER INTRAVENOUS INJECTIONS OF THE BENZOIC ACID DERIVATIVES USED AS LOCAL ANESTHETICS

	ALBINO RATS		CATS	
	Maximal tolerated and minimal lethal doses	Strength of solution	Fatal dose	Strength of solution
		mgm. per kgr.	mgm. per kgr.	
BUTYN	7.5-10	2	15*	1
ALYPIN	10-15	2	10**	5-10
COCAIN	12.5	2	15**	5-10
TROPACOCAIN	15-20	2	18-22**	10
BETA-EUCAIN	15-25	2	10-12.5**	5
STOVAIN	25-30	2	25-30**	10
NOVOCAIN	45-55	2	40-45**	5-20
ANETIN NO. 1	600-800	2	800-900	4

*Fatal dose obtained by Professor Robert H. Hatcher. See Bonar, M. L., and Sollman, Torald. J. Pharmacol. & Exper. Therap., Balt., 1922. Vol. 18, p. 475.

**Fatal doses obtained by Professors Cary Eggleston and Robert A. Hatcher. J. Pharmacol. & Exper. Therap., Balt., 1919. Vol. 13, p. 444.

*We are indebted to the H. A. Metz Laboratories for preparing and furnishing this material.

of the drugs injected per kilo body weight, each abscissa representing 10 milligrams. The shaded portions of the ordinates show the maximal tolerated doses, the unshaded portions the minimal lethal doses. The chart shows that butyn is the most toxic of the benzoic acid derivatives used as local anesthetics. The maximal tolerated dose is 7.5 milligrams and the minimal lethal dose 10 milligrams. The maximal tolerated dose of cocain as well as the minimal lethal dose is 12.5 milligrams. The maximal tolerated dose of novocain is 45 milligrams and the minimal lethal dose is 55 milligrams.

In order to compare the toxicity of anetin No. 1 with the other benzoic acid derivatives used as local anesthetics it was necessary to prepare a chart on a much smaller scale.

The abscissae represent the number of milligrams of the drugs injected per kilo body weight, each abscissa representing 100 milligrams. The shaded portions the minimal lethal doses. The maximal tolerated dose of anetin No. 1 is 600 milligrams and the minimal lethal dose is 800 milligrams. The chart shows that anetin No. 1 is at least sixty times less toxic than butyn, forty-eight times less toxic than cocain and eleven times less toxic than novocain.

In the first column are given the local anesthetics employed; in the second column the maximal tolerated and minimal lethal doses for the albino rat in milligrams per kilo body weight; in the third column the strength of the solution injected into the saphen-

ried out which indicate that anetin No. 1 may have a strong antiseptic value.

1. Control. One cubic centimeter of a heavy suspension of an old broth culture of spore bearing organisms originally obtained from soil was added to 25 cubic centimeters distilled water and thoroughly mixed. The diluted bacterial suspension was placed in resistant glass ampules, sealed and then submerged in boiling water for 150 minutes (2½ hours). Dextrose broth and dextrose agar cultures were then made and incubated at 37 degrees centigrade.

Result—Heavy growth in all tubes within 48 hours.

2. One cubic centimeter of the bacterial suspension added to 25 cubic centimeters of a 20 per cent anetin solution in 40 per cent dextrose and thoroughly mixed. The mixture placed in resistant glass ampules, sealed and allowed to stand for 24 hours. Dextrose broth and dextrose agar cultures were then made and incubated at 37 degrees centigrade.

Result—No growth after 7 days.

3. One cubic centimeter of the bacterial suspension added to 25 cubic centimeters of a 2 per cent anetin solution in distilled water. The mixture placed in resistant glass ampules, sealed and allowed to stand for 24 hours. Dextrose broth and dextrose agar cultures were then made and incubated at 37 degrees centigrade.

Result—No growth after 7 days.

4. One cubic centimeter of the bacterial suspen-

A QUANTITATIVE COMPARISON OF THE TOXICITY OF THE BENZOIC ACID DERIVATIVES USED AS LOCAL ANESTHETICS. RATS INJECTED INTRAVENOUSLY. PERCENTAGE OF RATS THAT DIED.
(The numbers within the parenthesis represent the number of rats used in the series)

	Dose expressed in milligrams per kilo body weight															
	5	7.5	10	12.5	15	17.5	20	25	30	40	45	50	55	60	500	600
	Perct.	Perct.	Perct.	Perct.	Perct.	Perct.	Perct.	Perct.	Perct.	Perct.	Perct.	Perct.	Perct.	Perct.	Perct.	Perct.
BUTYN	0(6)	20(5)	70(10)		100(5)		100(5)									
ALYPIN	0(5)		14(7)		71(7)		100(5)									
COCAIN			0(5)	60(5)	80(5)		80(10)	100(5)	100(5)							
TROFACOCAIN			0(5)		20(5)		100(5)									
BETA-EUCAIN			0(5)		20(5)		40(5)	100(5)								
STOVAINE							0(5)	20(5)	100(9)							
NOVOCAIN									0(5)	0(14)	17(30)	25(40)	57(23)	75(24)		
ANETIN NO. 1															0(10)	19(21)
																40(5)
																60(5)

ous vein of the rat; in the fourth column the fatal dose for the cat and in the fifth column the strength of the solution injected.

The fatal doses for the cat with the exception of anetin No. 1 are the results which have been reported by Hatcher and Eggleston, 1919, and Hatcher, 1922, and were obtained by their rapid intravenous injection method. The fatal dose of anetin No. 1 for the cat was obtained by the injection of a 4 per cent solution of the drug in distilled water into the femoral vein at the rate of 4 cubic centimeters a minute. The fatal dose is considered the dose at which respiration stopped.

It will be noted from the chart that the results obtained by the injection of water solutions of the drugs intravenously into the cat and the albino rat are quite comparable and that there is very little variation in the maximal toxicity for the two species.

It will be noted that the toxicity results obtained by injecting the local anesthetics intravenously into albino rats by the above described method are clean cut and that the difference in the individual susceptibility of the animals is slight.

ANTISEPTIC ACTION

The following bacteriological tests have been car-

sion added to 25 cubic centimeters of a one per cent anetin solution in distilled water. The mixture placed in resistant glass ampules, sealed and allowed to stand for 24 hours. Dextrose broth and dextrose agar cultures were then made and incubated at 37 degrees centigrade.

Result—No growth after 7 days.

The spore bearing organisms used in this test are very resistant. They were obtained after boiling soil fourteen hours and as shown above, they withstand boiling water under slight pressure for at least two and a half hours. A one per cent solution of anetin No. 1 is sufficient to kill these organisms within 24 hours.

ANESTHETIC ACTION. ANESTHETIC EFFICIENCY FOR THE HUMAN SKIN, INTRACUTANEOUS METHOD.

The flexor surface of the forearm was swabbed with alcohol. Injections were made into the skin with a 26 gauge needle attached to a Luer syringe. Three Wheals were made across the forearm, 9 to 12 millimeters in diameter, each required about 0.4 cubic centimeters of solution. The wheals were tested with a point of a large pin. The solutions were made up in 0.6 per cent sodium chloride.

DURATION OF COMPLETE ANESTHESIA

Drug	Right forearm			
	Ulnar wheal minutes	Mid wheal minutes	Radial wheal minutes	
Anetin, 1 per cent	20	20	22	blanched wheal
Novocain, 1 per cent	16	17	20	pink wheal
Anetin, 0.1 per cent	6	6	7	blanched wheal
Novocain, 0.1 per cent	5	7	7	pink wheal
Left forearm				
Anetin, 1 per cent with suprarenin 1:180,000	30	61	64	blanched wheal
Novocain, 1 per cent with suprarenin 1:180,000	38	58	62	blanched wheal
Anetin, 0.1 per cent	6	5	6	blanched wheal
Novocain, 0.1 per cent	6	10	12	pink wheal

The above intracutaneous tests indicate that the anesthetic action of anetin and novocain are about equal, the anesthesia produced by each being equally enhanced by the addition of suprarenin 1 to 180,000. Neither produced any pain on injection or subsequently.

CLINICAL OBSERVATIONS

In our series of over four hundred cases where we have tried out this new anesthesia clinically there are three groups: First, a large number of cystoscopic procedures; second, a smaller group of some fifteen suprapubic cystotomies, which we consider give more accurate information than the first group; and last, a group of perineal prostatectomies which we have considered the supreme clinical test.

Three hundred and fifty cases of cystoscopy after the use of anetin have been carefully recorded, charted and analysed. At first a 2 per cent solution was made. Eight cubic centimeters of this solution were introduced per urethram and in the male held with a penis clamp. Ten minutes was usually allowed to elapse before the instrument was passed. In the first twenty-five cases two were unsatisfactory. One of these was a woman with a urethral caruncle and the other a man with a tuberculous kidney. The man complained that the effect of the anesthetic began to wear off after 25 minutes. For this reason the strength of the anetin was increased to 4 per cent and the same amount (8 cubic centimeters) was usually given. Occasionally, for nervous patients, twenty or thirty cubic centimeters were given with excellent results. In several nervous women an entire ampule was given undiluted; that is, 5 cubic centimeters of a 24 per cent solution.

We have on the whole considered anetin in 4 per cent solution the equal of any anesthesia for cystoscopic procedures. We base this opinion upon a comparison with our experience with butyn 2 per cent solution used for six months before the introduction of anetin, also with phenmethylo 2 per cent solution used the year previous, and lastly with 4 per cent novocain which we have used occasionally for years. Anetin is superior to these in its freedom from toxicity and equal to them in its power of anesthetizing the urethra and bladder in a topical application.

In using anetin for local infiltration in suprapubic cystotomies, hernias, varicoceles and circumcisions, we paid special attention to any irritative or destructive action as well as to anesthetic powers. In these cases a 2 per cent isotonic solution was used in every case. We had two experiences with hypertonic solutions. One was a circumcision, in which the patient, in addition to the imposition of a very inferior anesthesia, suffered from swelling, redness and tenderness at the site of the injection for several days. The other was the case of one of our own doctors who had a small sesamoid removed from his thumb with a 5 per cent solution, two and one-half times isotonicity. The operation was painless but the thumb was indurated for two months.

Used in isotonic solution we have never had any signs of irritation or destruction from anetin. The majority of our suprapubic wounds have healed above and below the drainage tube by primary intention and without delay. As to any benefit derived from the antiseptic power of anetin we are not in a position to say in this type of case. Infection of a wound secondary to an infected bladder is only momentarily delayed, if at all. Surely it is not more efficacious than a dash of alcohol before closure. One case in our series of cystotomies did not have a satisfactory anesthesia. This patient was hard of hearing and in the usual loud voice of the deaf he protested every step of the operation. We have had this occur with other anesthetics.

At this point we wish to put ourselves on record as being opposed to the routine or general use of epinephrin in local anesthesia. The anesthesia produced by novocain and anetin are equally enhanced by its addition and it is argued that by slowing the absorption of the anesthetic danger of general intoxication

tion is minimized. Local injections of any anesthetic in doses large enough to be dangerous when absorbed should be used advisedly. The action of epinephrin is a direct one upon the sympathetic nervous system—0.5 cubic centimeter of 1 to 1,000 solution of epinephrin given subcutaneously in a normal individual causes a rise in blood pressure of 10 to 20 millimeters of mercury, which lasts for at least ten minutes. This is accompanied by an acceleration of the pulse and a sense of nervousness. To a person about to undergo a local operation this frequently causes a palpitation and excitement which is more terrifying than a certain amount of pain. And beware the patient with a slight amount of hyperthyroidism. He is especially sensitive to epinephrin as shown by Goetsch. A few minims of epinephrin and his blood pressure rises 50 to 100 millimeters and he is in a state of such wild excitement that any thought of local anesthesia is gone.

We have used anetin both with and without epinephrin and find that we are just as successful without it. Cystotomies, hernias and sacral anesthetics have been quite easily done without it.

In eight sacral anesthetics in which anetin was used, not a single case developed toxic symptoms. Thirty cubic centimeters of a 5 per cent solution of anetin was injected directly into the sacral canal by way of the sacral hiatus in five of the cases, and thirty cubic centimeters of a 2 per cent solution was also injected into the sacral foraminae.

In performing a transacral injection the

antiseptic power of anetin is a safeguard against an infection which might in this region prove fatal.

Out of the eight sacral cases, three were unsatisfactorily anesthetized. These cases had to be given a general anesthesia which in one instance led to death in 16 hours after operation. Of the five satisfactory cases one was a Young's punch operation which is here discounted as not being a severe enough test. Of the remaining four cases one was a litholapaxy which took nearly two hours, during which time the patient was entirely comfortable. The remaining three were perineal prostatectomies which in every case were done without pain. The patients did not develop any signs of shock. Two of the patients slept the first night even better than the night before they were operated upon when they were nervous.

In the three failures only a 2 per cent anetin solution was used in the sacral canal and in the same amount, thirty cubic centimeters. These failures could not be explained upon the ground of improper administration of the drug, and were considered sufficient evidence to warrant the discontinuance of anetin for this form of anesthesia. As this is the type of anesthesia we are most anxious to use, we are not entirely satisfied.

In closing we wish to state that the present series of cases is too small to make definite conclusions, but we feel that anetin offers greater possibilities than any other local anesthetic we have used.

PARKINSONIAN SYNDROMES*

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(From the Department of Neurology and Psychiatry of the College of Medicine, University of Nebraska)

Parkinson's Disease has received more notice in medical literature in the past few years than formerly, not so much on account of the bizarre symptoms manifested, as on account of the relative frequency with which similar symptom complexes are now observed. The original type so ably described by Parkinson over a century ago has fairly constant symptoms while similar syndromes are more variable. Epidemic encephalitis seems responsible for the advent of many of these cases. Out of a series of ninety-two patients who had epidemic encephalitis from one to

three years previously, Grossman⁽¹⁾ has reported forty-two with a clinical syndrome closely resembling paralysis agitans. Twenty others showed a more or less progressive involvement of the central nervous system but with other syndromes. These figures would indicate that of all the sequelae of epidemic encephalitis, Parkinsonian syndromes are in a big majority. There does not seem to be a uniformity of opinion as to whether these conditions are a lighting up of infectious foci or whether degenerative changes show up where the disease process originally has been the most acute.

So slight are the first symptoms of true

*Read at the annual meeting of the Nebraska State Medical Assn., Omaha, May 13-15, 1924.

paralysis agitans that it is hard for the patient to recall the date of onset. In the beginning one extremity alone shows any change such as tremor. This trembling of the hand or fingers may be followed by a slight weakness of the same parts, and it may be a year or so before the patient feels any real alarm over the situation. Then instead of the tremor becoming less, it becomes greater and the other side in turn shows a slow shaking with a suggestion of weakness. The upright position may then become modified to a definite stoop. This is especially noticeable in walking. One leg begins to tremble and suffers fatigue sooner than the other and after many months the remaining extremity exhibits the same evidence of involvement. A small percentage of cases do not have tremor.

So far, the patient adjusts himself to the changing conditions but at length certain movements cannot be made with the same control as formerly. Considerable attention is required to prevent a fall at times. He discovers greater difficulty in eating so that that act is much retarded and care must be exercised at meals. Writing becomes laborious and unsatisfactory while reading is in turn rendered impossible on account of tremors of the hands or head. Complaints about the constant annoyance from the continuous shaking are to be expected but the difficulty in speech and the passive placid face probably hinder the full expression of such complaints. At first, walking would give relief by diverting the attention but now so insistent have the tremors become, that if they let up in one part, they immediately appear in another. The persistence of the thing becomes unbearable. When the festinating gait becomes established he is denied the partial relief afforded by walking here and there. He has to be assisted else he will pitch forward.

At a still later time, the patient may become relatively helpless, being fed by others and not getting about at all without assistance. The mind is clear but speech may be almost unintelligible on account of the disturbed articulation from muscular weakness, stiffness and from the presence of considerable saliva in the mouth at all times. The speech is difficult to start and when once begun, consists of short choppy sentences, blurted out and stopping suddenly as though half said. The movements of the limbs soon-

er or later occur during sleep, waking him up, causing a feeling of alarm.

So in the average case of paralysis agitans we find a chronic disorder of the nervous system, usually in persons over forty, characterized by a distinct type of tremor commonly called pill-rolling, a more or less pronounced rigidity of the muscular system, a peculiar speech with hasty, monotonous "vanishing" utterance of sentences, a festinating gait, a mask-like countenance and a stooping attitude with arms partly flexed in front of the body. The speech is delayed and then blurted out. The movements are retarded and then suddenly manifested. The emotions are held back from expression and then are precipitately shown. The walk is slow to initiate and then a hurried succession of short steps results in a gait by which it seems as though he were trying to "catch up with his equilibrium."

According to J. Ramsay Hunt⁽²⁾ the pallidal syndrome or syndrome paralysis agitans is produced by any lesion destroying the motor cells of the pallidal system of the corpus striatum. The corpus striatum, a part of the basal ganglia, on each side is composed of the lenticular nucleus and the caudate nucleus. The lenticular nucleus may be further divided into an external part called the putamen, and an internal part, the globus pallidus. The putamen and the caudate nucleus, histologically the same in structure, constitute the neostriatum. The globus pallidus is termed the paleostriatum being the older structure phylogenetically.

Hunt mentions as causes of the paralysis agitans syndrome "primary atrophy, vascular degenerations, and various gross lesions of the corpus striatum such as softening, hemorrhage, tumors, encephalitis and syphilis. In the recent pandemic of encephalitis, numerous cases were encountered of symptomatic paralysis agitans occurring during the course of this affection, and referable to a localization of the inflammatory process in the corpus striatum."

Walshe⁽³⁾, in reporting a case of encephalitis with Parkinsonian symptoms stated that the focal symptoms indicated a lesion of the basal ganglia and the tegmental region of the midbrain. The symptoms were regarded by him as examples of a mechanism released by defective activity of co-operative centers.

Contrary to the opinion of Ramsey Hunt,

Tretiakoff holds to the belief that the lesions, atrophic and degenerative, are to be found in the substantia nigra. He found definite pathology there in nine cases of bilateral paralysis agitans and in one case of unilateral paralysis agitans⁽⁴⁾.

The following case under my care at the dispensary of the College of Medicine of the University of Nebraska, serves to illustrate a type of paralysis agitans in which there is no history of encephalitis or influenza, but of alcoholism with a severe trauma just before the first symptoms were noticed.

G. L. Male, age 29, laborer, Greek, single. Was first seen Dec. 31, 1921. Diagnosis at that time juvenile paralysis agitans.

Family history: Father L-W. Mother died 3 years ago of "flu". 2 brothers dead, cause unknown. One sister L-W.

Personal history: Has always been a heavy drinker. Two years ago, he fell down stairs while intoxicated. Trouble started soon after that. He has complained of double vision once in a while. Nicturia one or two times.

Complaint at the time: Weakness in knees, arms, shoulders and back. Unable to work. First noticed trouble in hands. His movements became slow and he felt weak. This condition then gradually spread to arms, shoulders and then to legs. Now cannot control movements of legs. Upon seeing the patient, one was struck with the deliberate way in which he acted — moreover a definite coarse tremor was shown as he removed his hat. He could not remove his overcoat. The movements of his arms were jerky. He showed no expression in the face and when he turned he moved as one piece from the waist up. The arms and forearms were slightly flexed and the thumb and fingers approached near each other. His slightly stooping position remained the same over long periods of time. In walking, the leg movements were restrained and there was no natural swing to the arms. His speech was delayed and when words were finally blurted out they seemed chopped off and rapid, stopping as abruptly as they began. Mental condition was good.

Neurological examination showed no strabismus, no ptosis — eyes react to 1 & a. Tremor of tongue and about the mouth. No shaking of the head. No Romberg. Slow, stiff gait. Deep reflexes normal. Sensation not disturbed. Rapid speech starting abruptly. When suddenly pushed forwards or backward he would take a half dozen short steps before gaining his balance. He was subject to sudden uncontrollable outbursts of laughter, not loud but apparently irresistible. Some days he would laugh at the least opportunity. Other days his control would be good.

Urine negative. Blood Wassermann test negative. Cerebro-spinal fluid negative. It is interesting to note that for five days after the spinal fluid was taken his right pupil was a half larger than the left. The two became equal on the sixth day. The urine each time was negative with but one exception when there was a slight trace of sugar.

On account of the mask-like face, tremors, stiffness of the muscles especially of the proximal parts

and general weakness, a diagnosis of juvenile paralysis agitans was made.

The treatment from Dec., 1921, to April, 1922, consisted of liquor potassii arsenitis 5 gtt., t. i. d. with hyoscine hydrobromide gr. 1/200 two or three times a day which benefited his condition. A month later he had considerable pain in his shoulders which was helped by local application. Later strychnine sulphate and salol were given. At one time sodium cacodylate was given for several weeks. About the middle of April he left for his home in Greece. His condition was slightly improved.

As to etiology, there was no history of infection. He was definitely alcoholic and gave a history of a severe fall just before the onset of disorder. I should note that x-ray of skull was negative.

O. L. Male, age 51. Laborer. Born in Denmark. Single. Family history negative.

Personal history: Has had a left facial paralysis from birth.

Complaints: Difficulty in walking. Hands said to be partially paralyzed. He has been noticeably worse in the last five months and has not been able to work.

Examination disclosed a severe conjunctivitis in both eyes with ectropion of lower eyelid on the left side, due to the old facial paralysis. No Romberg. Exaggerated knee jerks on both sides. Muscular weakness of upper extremities. There was a marked tremor of the tongue and a pill-rolling movement of both hands. Sensation undisturbed. Wassermann negative. Urine negative. He walked with the greatest difficulty on account of stiffness of muscles. Because of considerable drooling due to increased saliva, difficulty in swallowing, and the position of the head bent forward, the front of his vest and coat was continually soiled, which together with his mask-like face with ectropion and conjunctivitis, gave him a most miserable appearance. He was very despondent as well. This man after being cared for in the University Hospital for a time, returned home where he was still confined to bed. I continued to treat him there and later an improvement occurred so that he was able to be out of doors part of the time. Nothing definite was known as to etiology outside of a presenile state and a possible connection with the old facial paralysis.

M. S. Age 47. Male. Farmer. Born in Nebraska. Married. First seen Jan. 5, 1924.

Family history: One brother has epilepsy.

Personal history: Had gonorrhea thirty-five years ago. He used to smoke and drink. Has been nervous for past six or eight months.

The onset was six months ago, gradual, with drowsiness at that time. The right arm and hand began to shake. He used to have night sweats and would wake up gasping for breath. At the present he sleeps much of the time. His eyes tire quickly when he tries to read. His movements are of flexor-extensor type. The rigidity of his muscles render motions of all kinds very slow and jerky. Marked weakness is also noted. The face is mask-like and the body stooped to some extent. There is tremor of the tongue. Saliva accumulates in the mouth but there is no drooling as yet. There is a tendency in talking to cut words short. All voluntary movements are hard to execute. He walks slowly and is rather weak. All reflexes are normal. Wassermann test negative. Urine negative. No etiology de-

terminated. On the mental side he shows very definite depression. This is more pronounced than one would expect even with this chronic trouble. The possibility of attempted suicide should be borne in mind in this type.

J. J. Female. Age 19. Schoolgirl. Born U. S. Single. First seen April 2, 1923.

Family history: Negative.

Personal history: Four years ago was in some sort of accident with considerable fright resulting. Said to have had intestinal "flu" two years ago. Had diarrhea one week later, and a similar trouble when trembling first began. Some nausea but no vomiting. Has been losing weight steadily for past four weeks.

Complaint: Nervousness. Trembling of hands which began one year ago. Knees bend when walking or standing. Not able to straighten back. Drags toes when walking.

Examination disclosed: Marked tremor of eyelids when eyes are voluntarily closed. Vertical nystagmus. Pupils irregular and unequal L to R. Left pupil sluggish to light. Slight tremor of tongue. No Romberg. In walking there is a delay in starting and on account of the moderate flexion of the thighs and legs together with the muscular rigidity, there resulted a peculiar gait suggesting the act of riding a bicycle. On days when she was worse, she appeared to move as a runner or dancer in the ultra-rapid motion picture when the various movements may be analyzed in the slow long drawn out motions. Her left foot especially had a tendency to drop so that the toe of the shoe was worn down. The abdominal muscles were unusually rigid. The triceps reflexes were normal but the left knee jerk was greater than the right. Coordination was normal. At all times and especially upon exertion, a marked tremor of the left arm and leg was noted. There was also some tremor of the right leg. Sensation was normal, and there was no evidence of involvement of the vegetative nervous system. The spine showed slight kyphosis and scoliosis. Wassermann test negative.

As one looks over the record, he finds a pretty definite history of encephalitis lethargica. Early in the year 1922 she had an attack which she called the grippe, a severe headache, backache, coryza and a slight cough. Duration three days. Two weeks later she had some sickness in which she slept almost continuously from Thursday to Monday. A second attack a year later described as headache, sore throat, and backache was followed by one day of continuous sleep succeeded by three days of insomnia.

This case represents the type in which the principal involvement is in those extra pyramidal motor centers normally governing in an automatic way, the lower extremities. The tremor involves the distal portions of the extremities while the stiffness hampers the proximal parts. Attention should be called to the trembling of the eyelids so commonly seen in hysteria. There was no noticeable mental depression.

The Parkinson syndrome may occur in neurosyphilis. In paresis for example, the stiffness, mask-like face, and typical tremor may be found several months before any dementia may be demonstrated. The diagnosis

is made from the history, Argyll-Robertson pupil, changes in the deep reflexes, positive Wassermann test in blood and cerebro-spinal fluid, increased cell count, and colloidal gold test showing a paretic curve.

The treatment should vary somewhat depending upon the disease process producing the syndrome. For true paralysis agitans, Fowler's solution or sodium cacodylate is given with fair results. Hyoscine hydrobromide gr. 1/150 by mouth twice a day helps lessen the tremor in some cases. This may be given more frequently but if the patient shows any suggestion of delirium it should be stopped and gelsemium used for a time. Luminal is recommended but I have not found it of especial value. Quinine sulphate, atropine, veratrum viride, codeine, bromides, chloral, valerian and many other preparations do well in certain cases. Parathyroid extract gr. 1/20 gr. 1/10 or 1/6 t. i. d. is being used. Electricity in the galvanic current should be tried in painful conditions such as occur in some of the post-encephalitic cases. Quiet life, active and passive motion, vibratory and manual massage, hydrotherapy in the form of prolonged warm baths and tonic baths should be directed.

For post-encephalitic paralysis agitans, intraspinal injection of the patient's own blood serum is advocated by Moore⁽⁵⁾. He feels the syndrome is an evidence of an active inflammatory process showing itself after a relatively quiescent period, rather than of a purely degenerative change. He cites two cases in support of this contention. In one case, 30 cc. of inactivated serum were injected intraspinally and repeated four days later. In the other, a series of seven injections were given. Good results were claimed.

Rosenow's⁽⁶⁾ serum for treatment of encephalitis has been used with apparently good results in some Parkinsonian cases. The warmed serum is given intravenously, intraspinally or intramuscularly. The first dose should be given intramuscularly and not to exceed 20 cc. and that after testing for sensitization. All patients should remain in bed for at least a week after the completion of such a course of treatment.

In a recent London letter to the J. A. M. A. it was stated that epidemic encephalitis was becoming very prevalent in England. With 541 cases in 1919, 890 in 1920, 1470 in 1921, 473 in 1922, and 1038 in 1923, there is no especial indication that it is dying out. The first quarter of 1924 exceeds in number any

other quarter with the exception of the first quarter in 1921. With the large percentage of encephalitis cases which later present Parkinsonian symptoms it is evident that this syndrome in the next few years at least, may be frequently found. It is hoped that present methods may be improved or new methods developed whereby Parkinsonian sequelae may be prevented or their course retarded.

REFERENCES

1. M. Grossman. Sequelae of Acute Epidemic Encephalitis. J. A. M. A. 78:959. 1922.
2. J. Ramsay Hunt. Nelsons Medicine. P. 607.
3. Walshe. Brain 43:204. On the Symptom-Complexes of Lethargic Encephalitis.
4. A. Souques. Questions Neurologiques d'actualite. P. 205.
5. Ross Moore Treatment of Encephalitis. Transactions of Section on Nervous and Mental Diseases. A. M. A. 1923.
6. E. C. Rosenow. Specific Serum Treatment of Epidemic Encephalitis. J. A. M. A. 80. 1583.

DISCUSSION

F. W. Heagey, M. D., Omaha, Nebr.: I certainly do not want to see this excellent paper go by without some comment on the care he has shown in the descriptions of this type of case. He has included the type of case in which we have been interested from an internist's standpoint — the Parkinsonian type of disease resulting from epidemic encephalitis.

The number of remedies he mentioned as far as the treatment of this syndrome is concerned, shows to all of us how hopeless is the condition with which we are dealing.

I have jotted down some of the things I have seen in literature of the treatment of this Parkinsonian syndrome in the post-encephalitic cases. I have eight in addition to those he mentioned, each one having its advocates. The French have advocated atropin sulphate. In some half dozen cases it had more favorable, earlier effect than anything I could use. I have in mind an eighteen-year-old boy with this condition since 1916. He takes 4/150 grains of atropin sulphate a day, and when he gets out of the tablets he finds himself in trouble.

It is one of the most serious types I have seen accompanied by tremor and falling backwards. With a large dose of atropin aboard, he can dress himself and get around; but there is no progress as far as a cure is concerned.

I find luminal effective in the epileptic type. I have had some success with the Rosenow antibody solution. Patients felt they got some relief, also. I am afraid of the Rosenow serum when used intravenously. It is all right if you are sure the patient is desensitized.

The education of the patient is of value. Just as we take our locomotor ataxias and attempt to educate them to overcome their ataxia and handle themselves, I feel there is a large field for the handling of these paralyzes agitans to enable them to take care of themselves and get around.

The other thing is the early and active treatment of encephalitis itself. Make your diagnosis early, ridding the patient of every infection he has even in the middle of the encephalitis itself; the use of the Rosenow serum — both the serum itself and the antibody if you can get it. That is the only hope I can see for the prevention of this type of Parkinsonian syndrome.

I have wondered whether these regular types that come on in older people have an infectious basis earlier in life. Most neurologists do not feel there is much relation. In most of the older cases of paralysis agitans, very rarely do you obtain a history of an acute infection that simulates any disturbance in the base of the brain itself earlier in life. But from the results you get from encephalitis, very often the diagnosis is not made until a year after the acute infection, and you get no history of encephalitis except we find probably they had double vision for a day or two, or were sleeping for a short time.

Dr. Wigton, closing: I notice I forgot to say anything about tonsils and teeth. Few papers are ever complete without advocating having the tonsils and teeth fixed. We do that in these cases. In one case mentioned, all the teeth were removed and we had temporary benefit for three months, but the condition went on the same after that.

I believe these patients may have some infectious process that perhaps hastens the course of the disease. It would be hard to prove or disprove an early infection as a cause for true Parkinson's disease.

POST-OPERATIVE PAROTITIS*

Chas. F. Heider, M. D., Sutherland, Nebr.

Mrs. S. was admitted to the hospital for abdominal incision on January 9th, but due to the fact that she was suffering with slight bronchitis and cough, it was decided that this should be cleared up before the patient was subjected to an anaesthetic. On the 12th day of January, after the bronchial affliction had entirely subsided, the patient was subjected to laparotomy. Morphine sulphate $\frac{1}{4}$ gr. and atropine sulphate 1/150 gr. were given one-half before ether anaesthesia was started.

The only pathology found was a third degree retrodisplacement of the uterus — ovaries and tubes

were found to be free from disease. The appendix was removed as matter of prophylaxis against future disease of that organ. The uterus was suspended by anterior plication of broad and round ligaments, according to technique of Coffey.

After vomiting a few times in the afternoon, following the operation, the patient seemed to recover very nicely, the pulse coming down and the color being good. The next morning, however, the vomiting commenced again and as a consequence nothing was given by mouth. On the second day, considerable distention was noted in the upper abdomen; gastric lavage was given of bicarbonate or soda. This was repeated again in the afternoon, and

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a compound enema was given later for gas. The vomiting ceased, and peristalsis again seemed to be normal. The third day the patient was allowed liquids.

On the fourth day postoperative, a slight afternoon temperature was noted, 100°, and the patient complained of pain in angle of right jaw. At this time it was considered only as pain possibly originating from trauma to the angle by anaesthetist's fingers. Twelve hours later there was marked swelling in region of the parotid gland, and as a consequence we were aware of what we were dealing with — i. e. a post-operative parotitis. The swelling increased during the next twenty-four hours, until the right eyelid and the lips became markedly oedematous. Pain was intense. Palliative treatment, such as hot, moist compresses were resorted to. Three days after the onset of symptoms the right ear began to discharge a thick pus, following which there was a slight drop in temperature. The picture at this time was that of marked swelling of right side of the face, with tissues over the parotid brawny and of a dusky discoloration. No fluctuation could be detected in any part of the gland. Three days later the gland was freely incised, and tubing was inserted for through and through drainage. After this, the patient made a gradual but uneventful convalescence.

Paget, as early as 1886, described this complication with reference to abdominal surgery, reporting 101 cases, one-half of which complicated surgery of the upper abdomen, the other half he associated with operative work on the female pelvis. He considered the relation reflex or sympathetic. Since that time other writers have recorded cases not only associated with surgery of the abdomen, but also of other regions of the body, most of them considering this malady as of rather infrequent occurrence. It has been seen following clean cases, as well as infected — perhaps a little more frequently following pus cases than clean ones. One writer even reports a case of bilateral parotitis in a patient suffering from peritonitis with appendicitis, on whom operation was considered out of the question. Another reports the interesting phenomena of recurring bilateral parotitis in appendicitis. At the first attack the appendiceal abscess was drained and one year later another abscess was drained — bilateral parotitis following both attacks. About a year later another attack occurred, at which time the appendix was removed, following which there was again bilateral parotitis.

Secondary parotitis has by no means been limited to surgical cases. It has also been reported as complicating gastric ulcer, treated medically by oral starvation. Rollerston and Oliver, in the study of one thousand cases of gastric ulcer, found that in 470 patients, treated by oral starvation, there were 21 cas-

es-of parotitis, while in 530 cases who were allowed something by mouth, only two cases of parotitis developed. These two were on rectal feeding, but had been allowed to suck a little ice. It is evident from these cases that there is something other than a surgical operation that was the cause of parotitis. Rollerston and Oliver came to the conclusion that secondary parotitis may complicate cases of gastric ulcer treated by oral starvation; that it is ten and one-half times more frequent in these cases than those allowed fluid by mouth. They also state that it is an outcome of the dry condition of the mouth and that it is more often unilateral than bilateral, and that suppuration occurs in about one-fourth of the cases.

Secondary parotitis has been reported following amputation of the hip; also herniotomy. The type of anaesthesia seems to make very little difference, as it has followed local anaesthesia, as well as chloroform, ether or nitrous oxide. The preliminary hypodermic has also been considered, but seems to have very little to do with the condition, as it has occurred whether or not they were given.

In this condition, as in others where the etiology is not definitely understood or established, numerous theories for the cause have arisen.

(1) The Pyemic Theory. Two objections arise in this theory—first, parotitis occurs in conditions where no septic element exists, and second, autopsies of septic cases revealed no emboli in the gland, no thrombi at the primary seat of infection.

(2) Parenchymatous degeneration due to hyperpyrexia, has been given as a cause, but as the condition exists where there is little or no fever, this is of little value.

(3) Bouchard advanced the toxin theory, stating that the gland is affected in its unsuccessful attempt to excrete toxins manufactured by the organisms of the primary disease. Parotitis complicates diseases where no toxemia exists.

(4) Paget suggested the sympathetic or reflex theory after studying cases following operations on the generative organs, male or female. The chief clinical evidence of nervous connection between the parotids and sex glands arises from the occurrence of orchitis in mumps. There is hardly enough experimental proof of such a connection.

(5) Deaver places emphasis upon the

traumatic theory. Stating that in cases where there is difficulty in breathing, spasm of the muscles of the larynx, etc., the anaesthetist in endeavoring to overcome this condition carries the jaw forward by pressing against the angle of the jaw. Many times this procedure is not carried out as gently as it might be, and the lobes of the gland in this region are injured. This may be a factor, but the complication develops in cases where a perfectly normal anaesthetic was given and even where local anaesthesia was used; also in medical cases, such as mentioned before, i. e., gastric ulcer on starvation treatment where anaesthesia does not enter into the complex.

Hanan and Pilliet were the first to assign the cause to direct infection of the gland by extension through the duct from organisms of the mouth. They found that the inflammatory process began in the center of the lobule and spread toward the periphery and perilobular connective tissue, where the blood vessels are situated. They concluded from this that it was an ascending infection and not of embolic origin, else the inflammation began at the same time in the center of many lobules. These conclusions were borne out by Girode, who found on taking cultures from the gland, the orifices of Stenson's ducts and the mouth, that the organisms were identical, but were not the same as that of the primary disease.

It has also been demonstrated that ascending infection of the parotid duct can only take place under one or more of the following conditions: The organism at the orifice of the duct must be in larger numbers and be more virulent than is usual. The general vitality of the individual must be lowered to render him more susceptible to the infection. The parotid secretion must be reduced in quantity as well as quality. One or more of the above named factors exist with every disease or operation with which parotitis is associated.

In considering the cause of post-operative parotitis due to direct extension of the infection up Stenson's duct, the question quite naturally arises "why do we not have the same condition arise in the sublingual and submaxillary glands?", or, "why doesn't post-operative suppuration exist in these glands as well as the parotids?" The only possible explanation for this is that the parotids are serous glands, while the sublingual and submaxillary are mucous, and mucin as

shown by Low, is a bacteriacidal agent and acts as a protection against infection in these glands. Another possible explanation is the anatomical relation of the buccal orifices of the excretory ducts of the gland.

The complication occurs from the fourth to the eighth day, beginning with pain which becomes intense, owing to the resistance of the parotid capsule to the swelling. The swelling appears in front of the lobe of the ear, when the capsule is less dense. Soon the cheeks become brawny, the eyelids puffed, the lips swollen, and finally the whole side of the face becomes tense and shiny. The patient can hardly separate the teeth and lower jaw is pushed out of alignment with the upper. When the gland becomes hot and red there is a tendency toward suppuration. When suppuration occurs it must be readily incised, else it may rupture into the maxillary joint, into the auditory canal, or it may burrow into the chest or retropharyngeal space. At times it drains through the duct into the mouth, or ruptures into the cheek.

Treatment: The treatment is mainly prophylactic. The mouth should be kept clean with antiseptic mouth washes, both before and after operation. Teeth should also receive proper care. After the operation, the mouth must be kept moist by stimulation of the salivary glands. In patients who are denied solid food, the mouth may be kept moist by chewing gum or paraffin. Lemon juice is a splendid stimulant for the salivary glands, and can be given in form of allowing patient to suck the old fashioned lemon stick candy, or a rubber tube dipped in lemon juice also answers the purpose very well. Patients have been given horseradish or raw meat to chew, also made to keep a pebble in the mouth to excite secretions.

The second problem in prophylaxis is to furnish the patient with sufficient fluids, which can be accomplished by proctoclysis or if the rectum becomes irritable, and does not retain fluids well, hypodermoclysis should be the method of choice. No harm can be done by leaving the needles in the axilla. This will save the patient the pain of reinsertion. As long as four or five days will be tolerated well without much complaint from the patient. This procedure is of great benefit in parotitis, and in other conditions as well.

If the inflammation takes place in spite of the above means, free incision and drainage

should be resorted to in about four days if it is not subsiding at that time. Fluctuation should never be waited for, as the fascia covering the gland is dense and it takes a long time for the pus to work through and give evidence of its presence on the surface of the skin. It usually works along beneath the fascia and breaks into the auditory canal. Another reason for not waiting longer is that the parotid capsule, being very dense, tension becomes immense within the capsule and produces gangrene of the gland very rapidly. This is the most fatal type of parotid involvement. Incision should be wide, care being taken to not injure the principal branches of the facial nerve. If the tumefaction appears to be posterior, a posterior vertical incision is to be recommended, but two or three large horizontal incisions are to be preferred in practice, a little divergent in front. These incisions should be made only down to the parotid capsule. An ordinary

curved hemostat is now pushed through the capsule and opened so as to spread the tissues apart, seeking for pockets of pus as they are usually multiple. Generally, at first, if the gland is incised early, only sanguinous serum flows. The remission is not immediate, but occurs later when suppuration is free. Gangrene is prevented and pain relieved by decreasing the tension.

Prognosis: The prognosis depends upon the severity of infection and upon how early incision is resorted to. The mortality has been estimated as high as 30%. One author states that the gangrenous type is almost always fatal. Gangrene may result in thrombosis, phlebitis, or ulceration of large vessels with severe hemorrhage, necessitating the ligation of the external carotid. Sinus thrombosis, meningitis, retropharyngeal abscess, and abscess of the mediastinum should be considered as possible sequelae.

MASTOIDITIS AND ITS COMPLICATIONS*

R. D. Martin. M. D., Hastings, Nebr.

The serious complications of mastoiditis are meningitis, sinus thrombosis and brain abscess named in the order of their frequency.

Etiology. The streptococcus hemolyticus is the germ most prone to cause intracranial complications. Any member of this group as well as the staphylococcus, pneumococcus and numerous mixed infections may lead to these complications.

It is well to remember that mastoiditis, with any of its complications, may occur without any prominent middle ear symptoms.

The classical symptoms of meningitis are practically never all present in a given case. The three most often encountered are, headache, fever, irritability or loss of consciousness. Other symptoms frequently encountered are spinal rigidity, irregular pulse rate, nausea and vomiting.

Except in the very few cases where only a small circumscribed area of meninges is involved spinal puncture will reveal a fluid under pressure. The fluid may or may not be turbid. A clear fluid, in the presence of meningitis, has a tendency to coagulate. Pus,

blood, and bacteria may be present with a relatively high cell count.

The presence of chills with a fluctuating temperature should always lead to an investigation of the lateral sinus even when the mastoid has been previously drained. Other rather common symptoms of sinus thrombosis are tenderness over the point of entrance of the emissary vein and along the course of the jugular in the neck.

Evidence of embolism in the lung, liver, spleen, etc., are late symptoms as a rule and sinus thrombosis should be suspected previous to their occurrence.

Brain abscess is a more frequent complication of chronic than acute middle ear disease. The one case reported in this series occurred during the course of an acute infection.

The more common symptoms are, headache, slow pulse, sluggish cerebration and various localizing symptoms dependant upon the brain area involved. These complications are too complicated and exhaustive to be taken up in a paper of this scope.

Illustrative of the variable symptoms sometimes encountered in otitic meningitis the history of the following cases is given.

T. D. A young unmarried man, age 29. Previous

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history negative. Influenza two weeks ago. Came to the office Mar. 4, '23, complaining of weakness and slow recovery from the influenza. Examination showed—Bell's palsy right side. Sinus transillumination clear. X-ray of right mastoid clear. No tenderness or swelling over mastoid. No earache or disturbance of hearing. Pulse 62, temperature 99° F., blood count W. B. C. 4,800, neutrophils 70%, lymphocytes 3%, endothelials 7%, urinalysis negative.

He was sent to the hospital and ice applied to neck and over the right mastoid. No headache complained of. He remained in the hospital four days. Temperature ranged from 98.6 to 100.4, pulse never above 84. Respirations normal. Patient rested well except for some restlessness the first night. His condition remained so good that he insisted on going home the fourth day. The Bell's palsy was much improved.

Five days later he developed a severe headache with marked spinal rigidity, became unconscious and died in 24 hours.

A spinal puncture revealed fluid under pressure. A cell count was made but data lost.

Owing to the fact that the patient's condition showed such marked improvement, while in the hospital, no spinal puncture was made at that time. Had this been done the diagnosis would no doubt have been cleared up.

Case two. E. S. A boy age 15. Brought in June 6, 1923, by Dr. Nowers. Had been under the care of another physician since May 26. Previous history negative. Left ear had been discharging for about two weeks. Temperature 104.2, pulse 125. Opisthotonus marked. Complained of severe headache and pain in both legs. Blood count, white cells 25,500, polymorphonuclears 56%, lymphocytes 20%, mononuclears 18%, eosinophiles 5%. Bell's palsy left.

The simple mastoid operation was done at once. Much bone necrosis and pus under considerable pressure found. Pus contained diplococcus. Spinal puncture while patient was still on the table showed fluid under pressure. Twenty-five cc. were removed and examination showed many diplococci, some intracellular. 25cc., polyvalent serum was given intraspinally.

Following the operation the Bell's palsy cleared up. The general condition remained bad and patient died the following morning.

The following four cases illustrate the variable symptoms encountered in sinus thrombosis. In only one case did we obtain a history of chills and septic temperature such as we ordinarily get in sinus thrombosis.

In three cases the thrombosis was discovered in the course of a simple mastoid operation and there were no symptoms pathognomonic of sinus thrombosis previously obtained.

Case one. A young man sixteen years of age. Previous history negative except for measles, mumps and chicken pox.

First seen at the office when he came complaining of a cold of about ten days duration which would not yield to treatment. Transillumination showed right antrum dark and puncture revealed pus. Open-

ing was made beneath inferior turbinate and sinus cleared up after daily irrigation for ten days.

Febr. 22, he complained of pain in right ear. Paracentesis drained bloody serum. Ear continued to drain until March 8th when tenderness appeared over mastoid area. Blood count showed white cells 6,000, polymorphonuclears 79%, pulse 100, temperature 98.2°, respirations 22, x-ray of mastoid positive. Urinalysis negative.

Patient was sent to hospital and operated at once. This showed a rather large mastoid with many necrotic cells containing pus under pressure. Microscopic examination showed streptococcus. The sinus was surrounded by a large abscess. The bony plate over sinus eroded and sinus covered with granulations. Sinus partly filled with an organized thrombus but still permeable to blood stream. The wound was packed in the usual manner and patient made an uneventful recovery.

Case two. Girl age 7 years. Previous history, infantile paralysis at 18 months, scarlet fever at 3 years of age. Present trouble began one month ago with earache and discharge from left ear. First seen at the office Dec. 19, 1923. Profuse discharge from left ear, swelling and tenderness over left mastoid area with obliteration of post auricular fold. Pulse 114, temperature 98.8°. Blood count, white cells 11,000, polymorphonuclears 75%, lymphocytes 23%, transitionals 2%. Pus from ear contained streptococcus and pneumococcus.

Case referred to hospital for immediate operation which showed mastoid cells necrotic and full of pus. Bony plate over lateral sinus and posterior fossa destroyed leaving sinus and meninges exposed to abscess. Sinus entirely obliterated, walls necrotic and cavity filled with pus and granulations. Meninges covered with granulating tissue. The internal jugular was ligated and sectioned. The sinus cavity cleaned out and the wound packed in the usual manner. Patient made an uninterrupted recovery and left the hospital on the seventh day.

Case three. C. J. A young man of 15 years. Previous history negative. Present trouble began five weeks ago with acute otitis media following a cold. First seen at the office Dec. 26, 1923. Left ear discharging profusely. Microscopic examination of pus showed streptococcus and staphylococcus. Tenderness over mastoid and x-ray positive. Blood count, white cells 9,600, polymorphonuclears 78%. Temperature 99.2°, pulse 100.

Immediate operation revealed mastoid filled with pus and bone over lateral sinus necrosed. Sinus completely filled with thrombus. The internal jugular was ligated and sectioned, sinus evacuated, and simple mastoid completed in usual manner. The patient made an uneventful recovery.

Case four. A young man 17 years of age. First seen at office June 13, 1923. Previous history, measles, mumps and pertussis. Present trouble began two months ago with purulent otitis media. Ear has been discharging profusely since that time.

Examination showed tenderness over left mastoid with slight swelling. Pulse 84, temperature 98.8°, x-ray findings positive. Blood count, white cells 9,300, polymorphonuclears 84%, lymphocytes 16%. Has had slight chills for several days and one hard chill last night. Pus from ear showed streptococcus. Patient sent to hospital and prepared for immediate operation which showed a mastoid of medium size

completely filled with pus and granulations. Bone over sinus eroded and filled with a soft purulent thrombus. The internal jugular was ligated and sectioned. The sinus drained from above and below.

Following the operation the temperature never went above 100 and pulse not over 96. Patient made an uninterrupted recovery and left the hospital on the eleventh day.

The next case is interesting because of the number and variety of symptoms encountered.

F. W. A boy 12 years of age was first seen Sept. 9, 1923. He gave a history of pain in the left ear for the past week. Examination showed furunculosis of external auditory canal. That portion of the drum membrane which could be seen appeared normal. Fork tests showed no diminution of hearing. Blood count showed white cells 13,000, polymorphonuclears 71%. Patient was seen at the office daily until Sept. 11. An x-ray of the mastoid on that date was negative. Sept. 18, the patient appeared very sick. Swelling had developed in front of and above the ear. X-ray showed mastoid cloudy. A Swartze operation of the left mastoid was done the same day. The mastoid cells were filled with pus. Since the patient's condition had changed for the worse so rapidly during the last 24 hours a lumbar puncture was done while the patient was still on the table. Twenty-five cc. of fluid under pressure were removed. The fluid was turbid and showed a cell count of 15,000 and contained many staphylococci. Staphylococcus was also found in the pus from the mastoid. Blood count showed white cells 38,000. Polymorphonuclears 95%. The following day lumbar puncture showed fluid still under pressure. Twenty-five cc. were removed and the count showed same as the previous day. The following day the cell count had dropped to 10,000 and patient seemed improved. Headache was much improved and opisthotonus practically gone. Sept. 23, fifteen cc. of fluid were removed and the cell count had dropped to 950.

Patient was taken to the operating room and one ounce of pus removed from beneath the temporal fascia through the mastoid wound. Sept. 24, blood count showed white cells 20,000, polymorphonuclears 85%, patient resting easier and condition seemed fair. Oct. 1. Patient again complaining of headache which increased in violence until Oct. 4, when pulse dropped to 64, temperature 100.4°. He had vomited several times. He was again removed to the operating room. The mastoid wound was extended upward and forward and an opening made over the sphenotemporal fossa.

The meninges were dark, congested and bulging. A small incision was made through the dura and a brain abscess knife inserted about one inch.

About one dram of pus was evacuated and a cigarette drain inserted.

There was no localizing brain symptoms and the patient's mentality seemed normal. He answered all questions readily and complained of nothing but headache.

After operation patient seemed much improved for twenty-four hours. Drainage was free and headache disappeared.

Oct. 7. He again complained of headache and became very restless. Spinal puncture recovered 10

cc. of fluid under slight pressure. Cell count had fallen to 240. Staphylococci still present.

Oct. 11. The posterior fossa was uncovered through the mastoid wound and the cerebellum explored but no abscess found. At the same time the sinus was explored and found normal.

He continued to complain of severe headache. Opisthotonus and vomiting recurred and he became comatose and died Oct. 18.

Drainage from the brain abscess and mastoid wound had practically ceased before death. Just before death temperature rose to 104.6°, pulse 160. Death was apparently due to meningitis. No autopsy was permitted.

One interesting feature of the case was that he never at any time had a discharging ear after the furuncle in the external auditory meatus had healed.

DISCUSSION

James C. Tucker, M. D., Beatrice, Nebr.: I wish to commend Dr. Martin on his paper, especially his case reports, which show this: That all infections of the mastoid are not simple things, by any manner or means. He has been very honest in his reports, because he has reported several cases which were unfavorable. I think we have altogether too many case reports, where the favorable cases are reported, and those that do not get along so well are left for some one else to think about.

I should like to ask one question. In the eight or ten cases reported with these complications which cover cases seen over a period of about one year, about what number of cases he had in order to get this number of complications?

H. W. Benson, M. D., Oakland, Nebr.: I think a valuable paper like that should not go by without at least commendation. This year we have been flooded with a lot of cases having apparently a streptococcal infection of the accessory sinuses of the head and many other parts of the body. That brings up the question how many of these cases are subject to the effects of a toxic nephritis, and the important question brought up, "What can we do to demonstrate early such infections, especially of the hemolytic type?" If you will read up Dr. Dicks recent literature, I think we have a principle that is a very valuable thing in these acute streptococcal infections where they are located in the ear. It seems to me with such an aid in diagnosis, we will earlier be able to determine just what to do, and possibly apply a preventive serum.

Dr. R. D. Martin: I think we had 38 or 40 cases with acute mastoiditis, not including those chronic cases where we did radical mastoids. About ten of cases I reported showed complications. That would these cases I reported showed complications. That would make one-fourth of the total number complicated.

Little Miss—"Doctor, will you fix up Kitty, there is a miss in her purr."

John Barleycorn's grave is about the only one the Senate ghouls haven't gone into; no doubt because they know he is not there.—*Cleveland Times and Commercial.*

BONE INFECTIONS*

H. R. Miner, M. S., M. D., Falls City, Nebr.

I believe that to adequately consider the subject of bone infections we must take into account those which are not originally such but which arise from a pre-existing pathology, either local or general, those in which the bone itself may not at first be involved. Of this class is arthritis deformans and syphilis and even, in the first stages, osteomyelitis.

There are only two grand classes into which we can divide them, the formative and the destructive and these, as might be expected, merge more or less into each other.

Dr. Robert W. Lovett sums the condition briefly as follows: "There are three processes true in diseases of the bone —

- (1) Diminution of lime salts.
- (2) Formative.
- (3) Destructive: Local and General."

In the order of their importance in producing the two latter the following diseases enter:

Arthritis Deformans
Syphilis
Osteomyelitis
Tuberculosis

In the destructive exactly the opposite is true, viz.:

Tuberculosis
Osteomyelitis
Syphilis
Arthritis Deformans

In other words the process in arthritis deformans is practically free from any destructive tendency whatever, confining its activities almost entirely to new bony outgrowths, while on the other extreme the tubercular bone process is as completely destructive with very tardy, much delayed formative tendency. Between these two, syphilis coming next to arthritis deformans is distinctly formative with some destruction of tissue. Osteomyelitis is greatly destructive but stimulates great and almost equal new formation.

DIAGNOSIS

Diagnosis is of prime necessity to proper treatment and can be done only by the use of every means at our hands. It might seem that here of all places the x-ray would make it simple and unfailing. Such is not, however, the case, it being frequently impossible to

decide from the x-ray alone with which one of two or three possible lesions we have to deal. The clinical and where possible, also, laboratory evidence must often, in the last analysis decide.

Briefly, arthritis deformans under the x-ray and also clinically is the surest of easy diagnosis, the proliferative bone nodules and spurs confined almost entirely to the articular extremities being quite distinctive.

Syphilis shows marked tendency to cortical thickening which is symmetrical but in bony curvatures must be distinguished from rickets. Here, almost uniformly, the cortical thickening is on the concave side of the curve in rickets and on the convex side in syphilis.

Tuberculosis usually makes a clean sweep of all of the bony structures with which it comes in contact, including everything in the locality, as contrasted to osteomyelitis where the destruction is less uniformly complete.

TREATMENT

The treatment is almost wholly non-operative in either arthritis deformans or syphilis and will be confined surgically to the prevention of deformities as much as possible.

In osteomyelitis it is just as wholly operative, drainage being supreme, early, free and continuous.

In tuberculosis don't operate as you value your reputation and your patient's life, for nothing is more prone or certain to a mixed infection of fatal proportions.

So we emphasize again diagnosis, clinical, laboratory and x-ray. That being accurate, where possible, you will know what to do and what is equally as important, what not to do.

DISCUSSION

H. W. Orr, M. D., Lincoln, Nebr.: Dr. Miner very kindly asked me if I would discuss this paper, and I am pleased to do so. He has given us an excellent review of the factors in diagnosis and the differential pathology of these conditions.

I should like to add a word with regard to the importance of drainage in osteomyelitis, about which, however, there can be no great difference of opinion. I am anxious to make this point: Along with drainage in osteomyelitis, as it is commonly done by surgeons, there is usually a neglect to take the precautions mentioned of splinting the limb properly for protection against deformity. As a further argument in favor of that kind of treatment, I have been pointing out for several years that we have been paying too much attention to the antiseptic treatment of these conditions. Of course,

*Read before the annual meeting of the Nebraska State Medical Assn., Omaha, May 13-15, 1924.

we believe in aseptic operation; but we depend too much upon antiseptic dressings — even when they are as good as the Carrel-Dakin dressing — and disregard the importance of proper splinting, rest and that sort of thing. If I were to choose on my own limb between having antiseptic dressings only or immobilizing only, I should take the splint.

In addition, Dr. Miner mentioned a point which should be strongly emphasized in regard to the drainage of tuberculous abscesses. There is a tendency to stick a knife into any large swelling and see what you will get. White swellings of the knee and that sort of thing very commonly come into the hospital with an inch opening discharging pus from a joint which should have been aspirated and not opened for the entrance of new organisms, and the consequent production of a joint with a mixed infection. If these conditions are treated by aspiration immobilization and proper splinting a much larger number of these patients will recover promptly, with a minimum of joint damage, and without complications.

I thank you.

Dr. Miner, closing: There is very little I want to add except that I appreciate Dr. Orr's emphasis of those two points.

The thing I wanted to do was to urge the importance of special care in diagnosis in these bone condi-

tions which mean so much to the usefulness, from an economic standpoint, of the class of people who usually have these troubles—and a large percentage, particularly of osteomyelitis, comes from the poorer class. They apparently can come from any source of infection. I have seen them come from apparently no cause. I have seen them come from chigger bites which have become infected; from an infected ingrowing toe nail; from a mastoid condition.

The patient may become a cripple, dependent upon the community, and usually finds some woman who will marry him, and always raises a big brood of children. If you do not send him out with a good leg, he and his family will be dependent upon the community economically, to say nothing of the disadvantage to the man himself.

I wish to say it seems to me that it is almost an unardonable thing to amputate for osteomyelitis. I believe with proper care and sufficient time, practically every case can be cured. I have seen cases, as Dr. Orr emphasized, die from mixed infection caused by injudicious, incautious opening of tubercular abscesses.

I wish to emphasize the fact that if you take the necessary pains to make your diagnosis first, you can avoid a lot of trouble.

FOCAL INFECTIONS SIMULATING PULMONARY TUBERCULOSIS*

W. I. Devers, M. D., Upland, Nebr.

In treating this subject I wish to treat it under three heads: First—Reasons why pulmonary tuberculosis may be mistaken for simulating conditions. Second—Those focal infections that most frequently cause confusion and error in diagnosis. Third—Some points to consider in making a diagnosis.

In the consideration of these points I want to divide the cases clinically as follows: 1st—Those cases in the stage of symptoms only; 2nd—Those cases in the stage of symptoms and early signs; putting in a third group cases in all other stages, which do not concern us much in this paper, as cases that have advanced this far are usually evident enough to avoid confusion with focal infections.

In the early stages when a diagnosis is most desirable pulmonary tuberculosis makes itself manifest by symptoms only, and it is these early symptoms that are so easily simulated by other conditions, and this fact makes it important that more care be exercised in eliciting a history and tabulating our findings than is frequently used. It is not that the condition to be differentiated is alike to pulmonary tuberculosis but that the early symptoms of tuberculosis may be found in

the diseases in question, and while the principal pathology is in the lungs, the symptoms could arise from pathology other than tubercular in other organs. So it is the grouping of these symptoms upon which we must base our diagnosis and to which I will call attention later. In these early stages our hope lies in observing the patient for there is no need to expect positive findings from physical examination or much less from the laboratory unless it be the sputum which may be present quite early or very late.

We have no definite time when the exposure took place or the condition became active, and no definite period of incubation established which leaves us in doubt as to what the extent of the process at the time of our examination should be, if tubercular, and we must begin to study its progress from that time. Some observations have been made on wound infections and found to average six to eight weeks by Liebermeister. This period is found to vary widely. That of an aerogenous infection is difficult to determine. A number of factors might be found active as the general resistance of the individual, the amount of immunity he might possess, and the size of the infecting dose.

*Read before Republican Valley and 10th Councilor District Medical Society at Minden, Nebr., May 29th, 1924.

Later when other symptoms appear we are handicapped by the fact that so many signs of the chest, as some one has put it, are notoriously misleading. The sound producing and carrying properties of the chest wall and its contents are so easily varied by slight differences in the anatomy of the individual, so many conditions can modify the findings we elicit from similar conditions in different chests, and dissimilar conditions, because of their location, in the same chest, that it makes it important to draw our conclusions from the sum total of our findings.

The position of the body, the tension of the muscles, the thickness of the chest wall, the laying on the chest wall of more than the pleximeter finger when percussing, the striking of more than one blow while listening for the sound response, as pointed out by Dr. Webb, gives one an idea of how easily we may be deceived in our findings. No one isolated sign spells much in the diagnosis of pulmonary pathology.

In cases more advanced, if it be a tubercular infection, the signs and symptoms are more definite, and if it be a focal infection, the localizing signs are more evident and the diagnosis is more easily cleared up.

The morbid processes and diseases simulating pulmonary tuberculosis are many, but the focal infections that cause confusion are few, nevertheless their insidiousness and lack of early localizing signs make them a source of real trouble.

It will be of assistance to us to keep in mind that the manifestations of tuberculosis are continually changing as the disease progresses and that the signs and symptoms that cause confusion in one stage have a different bearing in the picture of the next stage.

In the early stages with symptoms only, we will have to differentiate hidden foci of infection giving general systemic symptoms and no signs in the chest.

Under this head we have conditions such as an infected gall bladder that does not give any pulmonary findings but has the daily rise of temperature and other general symptoms simulating those of tuberculosis. I have in mind as an illustration of this, a case that was reported to me of an army nurse diagnosed pulmonary tuberculosis and kept in an army hospital for some time, spent time in private sanatorium, and after some years was relieved of her trouble by a drainage of the

gall bladder, attention being called to it by an attack of severe colic.

Occasionally a case of appendicitis is reported giving such a clinical history, and may become involved under similar conditions to that of the gall bladder. (Tice, *Practice of Medicine* p. 329, states that the prevalence of appendicitis emphasizes this as a point of focal infection giving either local or systemic symptoms.) At times the infection in the appendix is secondary to some other less evident infection as innocent appearing tonsils or sinuses, and all the symptoms do not disappear upon removal of the appendix. The A. M. A. Journal abstracts a case reported in a South American journal, of appendicitis simulating pulmonary tuberculosis for a period of four years and so diagnosed. It was also complicated by renal calculus. Some time after the passage of the calculus another attack of the symptom complex with localizing signs over the appendix called attention to that organ and after its removal the entire train of symptoms disappeared.

Adenoids if chronically infected, especially in children, may give symptoms simulating pulmonary tuberculosis. Placak, in *Cleveland Medical Journal*, 1923, XII-169, reports cases giving fever, anemia, loss of weight, fatigue, loss of appetite, night sweats, which cleared up promptly by removing the infected adenoid tissue, the examination of which did not show tubercle bacilli. Infected tonsils can produce the same results.

Pyelitis occurring in early childhood may be confused with pulmonary tuberculosis. We have the suspicious symptoms and etiology where the case follows some acute infection such as measles, or pneumonia or influenza, coupled with the fact that chest signs in children with pulmonary tuberculosis are not elicited early and that pus is not found in every specimen of urine in pyelitis.

As we pass into the second group of our cases we have to distinguish hidden foci of infection giving general systemic symptoms and also chest findings.

This class is represented by sinus infections with bronchitis and bronchiectasis. In a personal communication from Dr. Gilbert, he states that in his and Dr. Webb's work they find that these are the main focal infections simulating tuberculosis. Dr. Webb in an article published in the A. M. A. Journal, March 12, 1921, emphasizes the importance of a radiograph of the sinuses in all

cases giving symptoms of bronchitis and bronchiectasis and insists that they are so frequently the cause of infection that the internist must take them into consideration with chest infections. These two conditions cause a large percentage of the errors in diagnosis. Tice's Practice of Medicine, p. 328, describes frequent bronchial infections infecting the lymph nodes and bronchial submucosa with the production of symptoms simulating tuberculosis. Small bronchiectatic cavities frequently occur and give symptoms similar to tuberculosis. These give findings more frequently in the base where tuberculosis is less frequent.

Webb and Gilbert quote Rist as finding chronic bronchial cough in the French soldiers to be frequently diagnosed tuberculosis when in fact it was due to chronic disease of the nasal sinuses. And that Sergeant also reports that incorrect diagnosis were made in one-third of the cases of supposedly tuberculous soldiers.

J. C. Thompson, Nebraska State Medical Journal, December 23, 1924, reports a case carried about five years with a diagnosis of pulmonary tuberculosis by different men, and later cleared up when a maxillary sinus was drained.

The upper respiratory infections can give the same subjective symptoms as tuberculosis and as Webb and Mullen have shown simulate tuberculosis in signs and symptoms that are very confusing. The conditions described above under adenoids and tonsils may be present with added signs in the chest. These tissues are frequently infected with tubercle bacilli, but non-tuberculous infections occur which necessitate a careful differentiation. Lewes in the American Review of Tuberculosis, 1922, describes this non-tuberculous infection as reasonably causal of the pre-tuberculous stage in children just before puberty. Such a lesion can lower the resistance sufficiently to permit a clinical tuberculosis, but when removed the individual's equilibrium is restored and he becomes master of the tuberculous infection.

George W. Covey, Nebraska State Medical Journal, contends that the infections confined to the apex are tubercular, regardless of any association with upper respiratory infection and bases his conclusions upon his interpretation of the spread of upper respiratory infections into the chest, and the frequency

of apical lesions being tubercular, and basal non-tubercular.

Then we may have conditions within the chest itself. Among these, influenza has caused a number of errors in diagnosis. The general symptoms of tuberculosis are easily simulated and the lung that has not entirely recovered but left an area or areas of consolidation produces the chest signs and focus of infection. Most confusing among these are the persistent or slowly resolving apical patches, or where the acute symptoms of influenza have subsided and the chronic bronchitis remains.

Small pulmonary abscesses occasionally cause trouble in diagnosis, especially where the symptoms have existed for some time and the etiology is obscure, or where the abscesses are small and multiple.

Endocarditis when septic frequently leads to a diagnosis of pulmonary tuberculosis chiefly on account of the chest findings and accompanying bloody expectoration. Also mitral stenosis when accompanied by hemoptysis.

In arriving at a diagnosis too much attention cannot be placed upon the history taking. It must be complete, it must be systematic and the events must follow each other in order of sequence. To accomplish this it is necessary to have before us an outline history sheet, not a general outline to cover a case of any description, but one prepared especially for conditions relative to the chest. The outline must be used simply for a working basis and to avoid omission of some points to which we should give attention and which might be passed over in the time allotted for the examination. It is not a chart upon which to record data by simple positive and negative answers but must bring out the essential points in the individual case. The history of the patient's environment, past illnesses, manner of living, etc., are important from the time of his birth. The proper recording and grouping of symptoms in history taking is almost impossible without some form as a guide. You cannot get a complete picture upon which to make a diagnosis of pulmonary tuberculosis from a rambling history. The outline may be printed upon the margin of the sheet and the history on the remainder where the points may have the space their importance in the history demands.

In many of the cases reported assimulat-

ing tuberculosis the symptoms are recorded as fever, loss of weight, rapid pulse, night sweats, anorexia, cough, fatigue, etc., but that simple enumeration of symptoms does not make a diagnosis. Those symptoms must have certain peculiarities, a definite place in the history, and a certain relation to each other, we must know their separate and relative values if we are to be more positive in our diagnosis of early tuberculosis. The men skilled in diagnosing pulmonary tuberculosis have a more rounded and intelligent picture in mind when determining a diagnosis, than they have yet taken the time or thought to give us in print. When a description of tuberculosis is written signs and symptoms are enumerated and their values omitted. A certain amount of fever and rapid pulse does not mean any more in tuberculosis than it does in countless other conditions, but a certain kind of fever and rapid pulse with a definite relation to other symptoms in the picture does mean something in tuberculosis. Dr. Dunn's article in the April number of the Nebraska State Medical Journal on "Diagnostic Methods" in his reference to observation, is right in line in the consideration of tuberculosis.

The pulse and temperature in tuberculosis are liable, are very appreciably influenced by slighter causes than in other conditions. Tice's Practice of Medicine says the characteristic fever of tuberculosis produces none of the symptoms usually associated with other causes, and is less noticeable or disturbing to the patient.

Malaise is an early and troublesome symptom and is characteristically out of proportion to other symptoms and findings.

Sweating is noticeable in many conditions but the tubercular patient has a tendency to sweat that is not found in others. Regardless of the night sweats he perspires profusely from the axilla and his palms are often found moist when undergoing an examination. This has more significance in the ambulatory cases. It has been said that you should hesitate to make a diagnosis of pulmonary tuberculosis if the skin is dry.

The effect of rest upon the fever, pulse and general well being and in fact all the symptoms of a tubercular patient, is very marked and of great value in a differential diagnosis. Exercise readily elevates the temperature, accelerates the pulse, increases the tendency to sweat. The patient seems quite balanced

when left at rest but exercise quickly shows his intolerance. And thus in a clinical picture of tuberculosis all symptoms should be analyzed.

The late Dr. J. B. Murphy in his accurate study of acute appendicitis gave us a definite clinical picture—giving each symptom a limitation as to kind and a definite place as to time, which while it may occasionally vary, drew our attention so forcibly to the picture that the condition is relatively easy and certain of recognition.

An individual sign or symptom gives us a clue, a sign or symptom with a definite limitation gives us something upon which to build, a definite sign or symptom with a definite place in the history begins to shape our diagnosis and a group of such signs or symptoms gives us a disease entity. And with these a diligent search should be made for the signs that are positive in themselves. Where there is the least expectoration a search should be made for the tubercle bacillus. Until we have established a clinical picture that cannot be readily simulated by other conditions this is our only positive proof of tuberculosis. Examination of the sputum which should be repeated many times, and which is so often done but once and frequently not at all, should never be omitted where there is the least expectoration. Fishberg finds with a productive cough the sputum is positive for tubercle bacilli in 90 to 95% of cases with the antiformin method, with such a high percentage of positives and so often a negative with a simple smear, it is not wise to make a negative diagnosis without the use of some method of concentration.

Pottinger says that the diagnosis of early tuberculosis could and should be made by the general practitioner without difficulty. Such an optimistic view of the situation is a good idea if it does not beget carelessness in making a diagnosis and increase the errors we have just enumerated. This condition should be diagnosed by the general practitioner it is true, but he must realize the difficulties of the task and the harm done the patient by a wrong diagnosis whether positive or negative.

We often have a history strongly suggestive of tuberculosis but it often happens that some peculiarity or waywardness of some symptom or sign in an otherwise tubercular picture if followed up and closely investigated will give a different explanation

of the condition. We are frequently reminded of this at the post-mortem table, when we see a different shade to the picture to which we did not give enough attention because of other suggestive signs. A diagnosis of tuberculosis by exclusion in differentiating focal infections may be very much amiss because the symptoms of focal infection are not distinctive and the etiology is often obscure.

We must get away as far as possible and as early as possible from a probable diagnosis. A great amount of harm is done the

individual by a positive diagnosis based upon suspicious symptoms. His mental attitude is changed, his chance for employment is often questioned, and he is ruled out of the list of desirables for life insurance by passing along with a history of having had tuberculosis when often regulating the mode of life and building up the resistance brings him back. The public and insurance companies should be taught the error of their belief that once a tubercular always a tubercular, regardless of the stage in which the disease has been checked.

CONDITIONS FOLLOWING INFECTIONS OF THE RECTUM*

Hal C. Smith, M. D., Franklin, Nebr.

When we consider the functions performed and abuse given the rectum, it is not so much of a wonder that we frequently have infection at this point, as it is that we do not have it more often. There is no organ of the body so neglected and kept as uncleanly as the rectum. You know that many people seldom wash these parts, and after defecation will use anything as a detergent from a corn cob to the stiff paper on a Sears-Roebuck catalogue.

Before going into the subject let us briefly review the anatomy.

The pectinate line marks the division between the perineum and the anal opening. It marks the division between the external and internal sphincter muscles, likewise marks the difference in color between the mucosa of the rectum and the skin of the anus. While itself covered with transitional epithelium, it marks the division between the columnar epithelium above, and the squamous cells below.

The superior hemorrhoidal artery supplies the rectal mucosa only as far as the pectinate line, from there down the skin of the anus is supplied by the inferior hemorrhoidal artery.

From the standpoint of the lymph circulation, the pectinate line is the water-shed of the rectum, the division between the somatic and visceral lymphatics; the distal side draining to the inguinal nodes, the proximal one to the sacral and lumbar nodes. Thus you can readily understand why infections in this region may travel by way of either the systemic or visceral systems.

We have the superior, middle and inferior hemorrhoidal veins. Of these the middle and inferior form a plexus surrounding the lower part of the anal canal and skin, while the main trunks eventually terminate in the internal iliac veins to join the general systemic circulation.

The superior hemorrhoidal vein commences in a plexus of veins communicating freely with the circular veins surrounding the anal orifice, and it is through these communications that the portal and systemic circulations are connected.

The branches from this plexus terminate above in the superior hemorrhoidal vein, the main trunk of which eventually discharges into the inferior mesenteric vein which in turn empties into the portal vein and like other component parts of the portal venous system, neither the superior, hemorrhoidal nor the inferior mesenteric possess valves.

Therefore, the normal attitude of the human being an upright one, there is an uninterrupted column of blood in the veins extending from the liver to the anus, in which dependent position, they are to be found just beneath the mucous membrane and far less supported than veins elsewhere.

Anything obstructing the portal vein will increase congestion and dilatation, i. e., during unduly difficult efforts at defecation the abdominal muscles are contracted powerfully and exert considerable compression on all the venous portal circulation and simultaneously the sphincter muscle and levator ani are relaxed, thus leaving the hemorrhoidal veins still more unsupported to bear the brunt of pressure.

*Read at Republican Valley and Tenth Councilor District Medical Society at Minden, Nebr., May 29.

In this way dilatation commences and by means of free communication between the superior and other hemorrhoidal veins the latter share in the strain. Also, it is easy to see how these lower veins rupture or become thrombosed during violent expulsive efforts and produce one of our beginning troubles, an external thrombotic hemorrhoid, which is very common and to which very little attention is paid by the average physician. The patient frequently endures it until it ruptures of its own accord, becoming infected from the clothing frequently forming an ischiorectal abscess and this in turn very often terminates in a fistula.

It is conceded by Pennington, Mummery and other proctologists that bacteria the exciting cause, either directly or through their toxins, produce thrombosis, and are met with in veins which, owing to their location, are most exposed to infection. The rectal sinuses or diverticulae serve as catch basins or traps for the bacteria. Here they give off toxins which aid in producing irritation to be followed by inflammation and their entrance into the stroma. Beside this route they may gain access to the stroma through some abrasion such as scratching or the use of rough material as a detergent, and produce a similar process of tissue destruction.

In specimens of hemorrhoids submitted to the laboratory there were found colon and diphtheroid bacilli, streptococci, staphylococci, diplococci and other organisms and the same type of bacilli were found in specimens removed from the stump of former operations for hemorrhoids, as well as patients who did not present the classic symptoms of hemorrhoids, but were suffering from constitutional ailments. Removal of such points of infection corrected the constitutional or remote trouble.

This is a point we should bear in mind as today it is conceded a breach of ethics to not do a complete tonsillectomy, removing capsule in toto, and right here let me say it is just as essential that you do just as complete a hemorrhoidectomy. If you are going to cut the top off of a pile or cut it in two in the middle or two-thirds the way down and leave a stump, you had better leave it alone for in many cases that I have personally met from the advertising institutions, from injection treatments and otherwise, are worse off than when they commenced, and the work has to be all done over, in order to

relieve them of the train of constitutional symptoms which ultimately follow.

In one case of ischiorectal abscess that I have had, the abscess having been drained, did not heal forming a fistula. Upon complete excision I found an oyster shell, which the patient remembered swallowing but gave it no thought.

In another of the same type a beard of wheat with the stem a half inch long had perforated the mucosa and attempted to burrow out through the rectal muscles.

Again we can have an infection carried in by various methods from without, or injuries produced from without such as impalement. In three cases that I have personally had of impalement, they were produced while stacking hay and the men, when through, let the fork slip down the stack ahead of them and in sliding down the stack they became impaled. In two cases the handle perforated the sigmoid and bladder and resulted in death, the other case not being completely ruptured, recovered.

In proctologic work in the army in a camp of over 84,000 soldiers, over half being negroes, I found the per cent of ischiorectal abscess and fistulae about ten times as frequent in the negro as the white soldiers. In investigating the cause I found the colored soldiers carried heavy leather strops about 6 inches square with handle attached, the pad being perforated with holes about one inch in circumference and the minute they were dismissed from drill they would jump like a bunch of sheep and commence beating each other over the buttocks. The perforations produced welts and many terminated in ischiorectal abscess and these in turn often terminated in fistulae.

I also found among them a great many syphilitic gummata and gonorrhoeal infections of the rectum with many strictures. Upon investigation I found that sodomy was a common practice among them and a great many would insert objects of various natures in the rectum to produce sexual excitement.

The reason for failure in treatment of ischiorectal abscess with a subsequent fistulae is due to the fact that not proper drainage is given. An incision at least 3 to 4 inches long should be made longitudinal to the folds of the rectum and this should be packed and kept so for a sufficient length of time to prevent the edges of the skin from uniting

until completely drained and healed from the bottom.

Another common infection of the anal region is pruritis ani, conceded by many authorities to be due to the streptococcus fecalis. Ball of London treats the same by skin flap dissection with severance of the nerve endings, Hirschman, Earle and others using an autogenous vaccine made from the streptococcus fecalis. Various lotions, ointments and applications have been used with varying degrees of success.

The point I wish to bring out, however, is whether this be due to streptococcus fecalis, neurotic tendency, local infection or what not, at any rate the soldiers after being in the army for 3 months, drilling and marching 5 to 20 miles a day, getting shower baths night and morning together with regular meals, the most aggravated cases became well spontaneously. This seemed to be attributable to the fact that they were so completely exhausted that they could lie down anywhere and go to sleep, and did not scratch and dig the parts during rest hours as formerly; consequently, unnoticed by them, every vestige of former infection was gone in a short time.

One of the most frequent, most painful and the most overlooked infections of the rectum is a fissure. Why is this so painful? In explanation again the pectinate line is the division between the cerebrospinal and sympathetic systems of nerves. Tactile corpuscles are not met with on the proximal side of this line, but in the distal to it. Hence, sensation on the proximal side of this line is slight; while in and distal to it, it is very acute. Usually at the top of a fissure you will find an old infected sentinel pile or ulcer above the pectinate line. This in itself does not produce pain, but as soon as it burrows down to the distal side we commence to have pain and sphincteric spasms.

One case referred, for several years had put off defecation to only twice a week and would have to take the day off from work and roll on the floor and writhe in pain for hours afterward.

There is a difference of opinion as to treatment. Gant and his followers do a complete incision, while Mummery, Hirschman and others believe in excision. The end results depend upon drainage and unless excision of the skin is extended well out into the skin for half of an inch or more

to properly drain you will in many instances not get a complete cure.

Some of the most violent infections we have, come from the advertising quack. On one occasion I was called to one of these institutions to remove the son of one of my patrons. He had received the painless serum treatment. It had gone evidently, directly to the portal circulation with a subphrenic abscess and when I saw him he had meningitis of the worst type. This patient's life was despaired of for he ran sequelae of various natures for five months, with a subsequent endocarditis and finally a general streptococcal infection, and arthritis of all of the joints more especially the left elbow and arm, which after recovery is in a stiffened condition for life.

At about this time there were two other cases which came home with violent infection and had to be reoperated at once to institute proper drainage and save their lives.

In talking with different physicians over the state I find that they have had the same experience with these advertising institutions, most frequently the so-called painless serum treatment.

A confrere informs me that within the last year he had one lady with pelvic abscess that had to be drained following treatment in one of these institutions. One young man near Axtell, Nebraska, developed meningitis and died following this treatment.

Two years ago he had a lady whom he had to re-operate for stricture of the rectum, having to dissect the scar tissues from both sides of the rectum before dilatation could be completed.

In this day and age of focal infection, when everyone is harping about the tonsils, teeth, etc., it is surprising to me how few physicians ever examine the rectum. Now if you will bear this one thing in mind, that 85% of all rectal and anal diseases occur in or near the pectinate line and that 85% to 90% of all these diseases are caused by some form of infection, it does seem to me that we, as a profession, could at least make a digital and ocular examination. Very few physicians ever even use an anoscope or speculum and less few a proctoscope, and I believe if we tell the truth, a very few ever go so far as to use a sigmoidoscope. If we are going to be thorough it hardly seems fair to over-

look this point. It is surprising the number of ulcerative conditions beginning with infected fissures at the margin of the pectinate line with ulcerated condition at the base of the columns of Morgagni on up to the Huston valves, and not frequently, but it must not be overlooked, a carcinoma of the rectum. Too many of these cases are dead before they are diagnosed.

Owing to the many cases of proctitis, cryp-

titis, sigmoiditis and other rectal infections with secondary symptoms of colitis, and in many instances of the entire gastro-intestinal tract, subsequent to these, it would seem plausible at least, to give the focal infections of the rectum their share of consideration before blaming all the infection onto the tonsils and teeth, which perhaps in many instances require less effort to examine than the rectum.

FOCAL INFECTIONS OF THE NOSE AND THROAT*

E. C. Foote, M. D., Hastings, Nebr.

A focus of infection is a circumscribed area of tissue which has become infected with pathogenic micro-organisms. It may be either primary or secondary. Primary infections are usually located contiguous to, or in direct communication with, a mucus, or mucocutaneous, surface. Secondary foci result directly from other foci by continuity of tissue or by being carried through the blood stream, or lymph channels.

These infections may be located anywhere in the body, but especially are they a very prevalent condition in structures of the mouth and upper air passages. Coincident to the presence of numerous saprophytes in the mouth and pharynx, the saliva and pharyngeal mucus contain streptococci, staphylococci, micrococcus catarrhalis, pneumococci, diphtheria bacilli, meningococci, T. B., and others. Pyorrhea and alveolar abscess is a common condition in adults. Pus from these abscesses often contains one or more of these organisms.

The importance of the etiology relative to systemic disease has been recognized for the past ten years. Nearly all of the large medical institutions of the country have paid especial attention to it. Clinicians and laboratory men everywhere have devoted unlimited time and energy to its study. The work of Rosenau has thrown more light upon the real significance of the relation of focal infections to systemic disease than that of any other one man. He says, "The apparent position of the various members of the streptococcus group may be illustrated by the position of the fingers in a partially flexed hand, in which the hemolytic streptococcus occupies the position of the little finger, the pneumo-

coccus the place of the index finger, (the opposite extreme), the streptococcus viridans (representing the group of more or less saprophytic, non-hemolyzing streptococci) the middle finger, the streptococci from rheumatism, the ring finger, and the streptococcus mucosus, having some of the properties of both pneumococci and streptococci, the thumb. In this grouping there is, in general, an increase in parasitism and virulence as we approach the thumb. (Streptococcus mucosus)".

He has isolated strains of hemolytic streptococci, from scarlatina, acute tonsillitis, and other sources. Strains of the viridans from tonsils, alveolar abscesses, and the mucosus from blood, tonsils and sputa.

It has been proven by animal experimentation that the streptococci have selective affinity for structures in other parts of the body corresponding histologically to tissues in which the foci is located, and hence, are the underlying causes of other systemic diseases and disturbances. This is also true in the case of many other organisms. Or it may so happen that a number of different organisms may simultaneously acquire an elective affinity for the same structure, and the result be a mixed infection presenting a symptom complex.

Billups says that the tendency to localize electively is most highly developed in the relatively non-virulent strains isolated from chronic lesions.

Inasmuch as primary foci are usually located contiguous to, or in direct communication with a mucus, or a mucocutaneous surface, it ensues that these foci will be found in those parts of the body where these necessary conditions exist. No place in the human anatomy affords such par-excellent re-

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quirements as the pharynx and naso-pharynx, with their accessory sinuses. These accessory sinuses are cavities in the maxillary, frontal, ethmoid and sphenoid bones. They are lined with mucosa continuous with the nose, and communicate with the nasal cavities in places more or less definite. The great vascularity of the head and neck, together with its very adequate lymphatic system, afford abundant means of transmittal of infection from these regions to other parts of the body. As all substances necessary for body metabolism gain entrance through the nose and throat, and unfortunately, all of these not being free from infecting micro-organisms, why should not this region be the most frequent foci of primary infections?

We already know that a vast majority of systemic infections are incident to these primary infections and from my own limited experience, I am led to believe we are even yet cognizant of but a small part played by these often obscure, or entirely hidden, foci.

Rather than give you a rehash of what has been written, and no doubt read by most of you, I shall give you a few of my own experiences with these cases illustrative of focal infections, hoping thereby to stimulate discussion.

Case 1. In January, 1922, I was called in consultation on the case of H. B., female, 14 years of age, ill six weeks. First noticed pain and tenderness over right eye; three weeks later, slight exophthalmos, followed by great protrusion of eye ball. The family physician lanced through upper lid, and found pus in considerable quantity. Patient did not improve materially. Temperature and pulse variable. When I first saw the patient, she was in a semicomatose condition, temperature 104°, pulse 140, respiration Cheyne-Stokes, pupillary reflexes sluggish, beginning opisthotonos. Diagnosis, meningitis. Prognosis was hopeless. Parents were so informed; operation insisted upon; Killian operation was performed. Posterior ethmoids were removed. Bone necrosis was found through inferior plate of frontal into orbit. Post-ocular cellulitis and meningitis followed. Infecting micro-organism, pneumococci, influenza bacilli.

Case 2. Boy 4½ years old, mouth breather, rather undeveloped. Tonsils large, cryptic, catarrhal; adenoids nearly filling naso-pharynx. Cultures showed pneumo- and micrococcus catarrhalis. Urinalysis showed gravity 1038, no albumin, 1½% sugar. After careful examination of heart and lungs, I decided to put the matter up to the parents, and operate. if they consented. This was done, and ten days later the child was sugar free, and now, ten months later, is strong and healthy. This is only one of several similar cases we have had.

Personally, my experience would seem to

bear out the idea that practically all cases of chronic pharyngitis are secondary to focal infections elsewhere, especially of the sinuses. I have reached this conclusion because, while these cases may yield to treatment, they are prone to recur, until the sinuses are drained, infected tonsils removed, or some other focus of infection located and eradicated.

Case 3. On Saturday last, Mr. H., of Western, Kansas, was referred to us, history as follows: Age 25; weight 240 pounds; two weeks before had "sore throat" consulted physician, improved slightly for few days, but for past week grew rapidly worse. Intense symmetrical swelling of all tissues of throat, pharynx and larynx. Tongue swollen to roof of mouth and protruding between teeth. Face cyanotic and eyes showing exophthalmos. Urinalysis, albumin and granular casts. Smears showed streptococcus (short chain) and staphylococcus; cultures later confirmed. Patient had not been able to swallow for 48 hours. Diagnosis, Ludwig's Angina. Prognosis, bad. Hospitalized. Incisions around edge of tongue, long deep incisions under angle of each jaw, and down the anterior border of the sterno-cleido-mastoid, permitting of profuse serous discharge, gave some apparent relief. Saturated solution MGSO₄ and ice constantly. Anti-streptococcus serum, 20 cc., repeated in four hours, then in 8 hours.

On Monday afternoon breathing became very labored, patient more cyanotic, respirations 44, pulse 150. Did low tracheotomy, under local anaesthetic. Respiration and pulse became much improved. 4 hours later, lung appeared to be rapidly filling. At 4 A. M., Tuesday, conditions very bad. Unable to expel purulent fluid from tracheotomy tube. This was done by use of vacuum, gave slight relief, but patient apparently nearing end. Strychnia was given as soon as heart action weakened, and digitalis was now added. Two hours later, the fluid in lungs lessened greatly; oxygen was now administered for nearly an hour, and then at regular intervals thereafter. Swelling began to subside and patient able to drink for first time in five days. Liquids had been supplied by proctoclysis. During following 12 hours, swelling subsided sufficiently that the tube was removed. Lung clearing slowly. Respiration still 40, and pulse 140.

In the past few months we have had three cases of sinus thrombosis, complicating mastoid infections, following the exanthematous fevers and pneumonia. Fortunately, they were diagnosed early enough that, by radical procedures, we were able to prevent fatal terminations.

A case of more than usual interest was referred to us a few weeks ago. Double mastoid involvement following measles; child was covered with multiple cutaneous and subcutaneous abscesses, pneumo- and staphylococcus. Operation was refused for several days; when consent was obtained, both mastoids were opened and found necrotic, filled with foul smelling, greenish pus and very

exuberant hyper-granulations. Although no meningeal symptoms ever developed, the septicemia progressed until nearly the entire body was a mass of large abscesses.

Our files are replete with records of cases; nephritis, echolecystitis, chronic appendicitis, endo and pericarditis, phlebitis, etc., traceable directly to acute, or chronic foci about the head, and many of which cleared completely following eradication of these foci.

In conclusion, children are especially susceptible to infections of the teeth, nose, throat, sinus, middle ear, and mastoid cells. We know that freedom from infections of these areas would very much lessen the incidence of a large percentage of systemic diseases, both in children and adults. Early habits in children of care of the mouth, and teeth, and public education will, and are, doing much toward the prevention of focal infections, especially in early life.

More and more in our own practice, we are stressing to parents the necessity of attention to so-called colds which do not promptly clear up. In a vast majority of these cases that are brought to our attention, we find some, or all, of the sinuses involved. Taken early, and energetically treated, they respond well to treatment, but after they have reached the stage of chronicity, radical measures must often be used to effect a cure.

I am of the opinion that neglect of these cases in children and early adult life is responsible for a large percentage of sinus, tonsil and middle ear foci in later years. These individuals become carriers of various sorts and go through life as semi-invalids, low in body resistance, susceptible to multiple ills; efficient and successful to a far less degree than nature had intended them to be, or helpless citizens, dependent upon society for maintenance.

DIAGNOSIS OF DISEASES FROM FOCAL INFECTIONS OF THE THROAT*

E. I. Whitehead, M. D., Holdrege, Nebr.

Diagnosis of diseases from focal infections of the throat would include diagnosis of a large per cent of the diseases to which the human family is subjected. Dr. Keifer of LaFayette, Ind., in 1920, reported that there were sixty-one diseases attributed to infections of the tonsils and each year sees a few more added to the list. If this is true you will see the impracticability as well as the impossibility of attempting to discuss even briefly the subject assigned to me, therefore, I have limited my paper to only a few diseases caused by focal infection.

While a conception of focal infection causing systemic diseases is as old as medical history, it has been only within the last two decades that its importance has been appreciated. Dr. Rush, one of the signers of the Declaration of Independence, reported a case of rheumatism that was cured by extracting an ulcerated tooth. Paradoxical as it may sound, many physicians do not realize the importance of focal infection and perhaps nearly as many more over-estimate its importance and thereby overlook many other etiological factors. Focal infection is to clinical medicine what infection is to surgery. Dr. Billings says "Many of the systemic chronic processes are sequential to primary acute

diseases etiologically related to focal infection". Dr. Judson Daland says "Focal Infection under certain conditions may exist from one to twenty or more years, during which time it may be latent, intermittently systemic and later continuously systemic, dependent upon the progress of the disease."

Dr. E. C. Rosenow has demonstrated that the streptococcus in focal infection is not only pathogenic but often possesses remarkable specific characteristics, that is a preference for certain organs.

The three diseases that I have selected for discussion and which are receiving considerable attention from the standpoint of focal infection are nephritis, endocarditis, and gastric and duodenal ulcers.

NEPHRITIS

While nephritis is not usually considered one of the common results of focal infection, investigation of the last few years has to a considerable extent made necessary a readjustment of our views on the etiology of this disease.

Osler in his edition of 1916 on Practice says, "Acute Bright's disease may be caused by acute tonsillitis." In his edition of 1920, just four years later, he says of acute nephritis, "Many cases are due to streptococcus in-

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fection secondary to some form of infection as in the tonsils." Dr. Billing says, "That chronic infectious nephritis due to focal infection is very common and it probably first existed as a subacute infectious nephritis and is usually due to a strain of streptococcus with a special elective affinity for the kidneys." Dr. McElroy in Tice's Practice, edition of 1923, says "The idea of a bacterial origin of nephritis is rapidly gaining ground."

Various forms of nephritis have been produced by intravenous injection of streptococci. In harmony with the theory of the bacterial origin of nephritis it is now believed by many investigators that chronic nephritis is the result of repeated onslaughts and not the result of a continuous process.

Doctor Rosenow has found that twenty per cent of rabbits injected with streptococcus viridans from chronic infectious endocarditis, a disease in which glomerulonephritis due to this organism is commonly noted, developed focal lesions in the kidneys.

No doubt every physician who has had a large general practice for several years can recall one or more cases of nephritis in which the etiology was in doubt and who could have eliminated this doubt in the light of the present theory of focal infection. The large number of streptococci present in the throat in scarlet fever is the probable cause of nephritis being so frequent a complication of that disease. It has been found that nephritis is not so prevalent after scarlet fever in persons whose tonsils have been removed.

ENDOCARDITIS

In 1922 organic disease caused a hundred and forty-five thousand deaths, fifteen thousand more than tuberculosis. This fact makes the subject of endocarditis one of vital interest. Until recently endocarditis was looked upon simply as a common complication of rheumatism, lobar pneumonia and few other systemic diseases. In 1903, Schottmuller reported the isolation of a green forming streptococcus in the blood of patients suffering from endocarditis and he gave these micro-organisms the name of streptococcus viridans. Later it has been proven that endocarditis sometimes and in fact quite often occurs as a primary disease not preceded by any systemic illness and the cause is from some neglected and unnoticed focus of infection, perhaps an alveolar abscess or a bur-

ied infected tonsil. However, it may assume an acute form with a septic type of temperature with a high maximum and a low minimum. Often the clinical symptoms are a poor appetite, weakness, chills and fever resembling malaria. The writer remembers a case of endocarditis in Illinois about 18 years ago, before focal infection was seriously considered, when a consulting physician made a diagnosis of intermittent fever. The patient in a short time developed a typical case of organic heart disease and died in a few months. The close association between endocarditis and rheumatism, and between rheumatism and tonsillitis makes the subject of endocarditis of special interest in the discussion of infections of the throat.

While the question of treatment is not included in this subject I wish to take the occasion to say that in any case of endocarditis or myocarditis, if no other focus of infection is found the tonsils should be enucleated.

GASTRIC AND DUODENAL ULCERS

It is to Dr. E. C. Rosenow of the Mayo Clinic that we are indebted more than anyone else for original work in demonstrating the specificity of the streptococcus of gastroduodenal ulcers. By a series of extensive experiments on domestic animals, he has found that the streptococci from gastric ulcers have an elective affinity for the stomach producing ulcers and hemorrhages. He also proved that the streptococcus of gastric ulcers produced a poison within its substance which injures selectively the mucous membrane of the stomach.

He reported a case of duodenal ulcer in a young man and following a gastroenterostomy a complete relief was obtained for several months. No attention was given to focal infection at the time of operation. Eleven months later two more ulcers developed and then it was found that the tonsils were infected as well as some of the teeth. Marked evidence of healing occurred after removing the foci of infection.

It would be impossible at the present time to say if all or what per cent of gastroduodenal ulcers are the result of focal infection, but from investigations made it would seem as if the evidence was strongly in favor of focal infection being one of the chief etiological factors.

CONDITIONS PRODUCED BY INFECTIONS OF THE PROSTATE AND SEMINAL VESICLES*

F. A. Brewster, M. D., Holdrege, Nebr.

Within the last few years the majority of physicians are becoming familiar with conditions resulting from focal infections involving such common localities as tonsils, teeth and sinuses but the possibility of such remote areas as the prostate gland and seminal vesicles being the seat of focal infections has received very little consideration by the general profession.

The various glandular structures surrounding and draining into the urethra all have narrow ducts, furnishing a most fruitful field for the development of infections. The prostate, verumontanum epididymis and testes, comprise the most complicated functional system in the body and many cases of chronic rheumatism, arthritis, myositis, endocarditis, neuritis and other lesions have been generally improved by operation for drainage or extirpation of the seminal vesicles or of the prostate gland.

MacKenzie reports many patients who had been treated for lumbago, sacro-iliac disease, renal calculus, appendicitis, neuralgia, sciatica and various neuroses all due to disease of the verumontanum, prostate or seminal vesicles, the frequency and importance of which are little recognized by the medical profession.

Culver concludes that anaerobic as well as aerobic organisms may be the exciting cause of prostatitis and spermatoecystitis and that chronic infections of the prostate and seminal vesicles may be responsible for subacute and chronic arthritis. Other authors (Barney, Fuller, Young), have also noted that many arthritic cases have been cured, improved or made non-progressive by draining a genito-urinary focus of infection.

The following bacteria have been determined as producing focal infections in the genito urinary tract: the gonococcus, the streptococcus-pneumococcus group, the staphylococcus, the bacillus tuberculosis, the bacillus coli communis, the bacillus typhosis, the bacillus pyocyaneus, and the various diphtheroid forms.

On account of the frequency of gonorrheal infection in men most physicians are of the opinion that prostatitis and seminal vesiculitis

are essentially a post-gonorrheal condition and does not exist if there has been no antecedent gonorrhea. Nothing could be more erroneous than this, and it should be borne in mind that these organs offer little if any more resistance to other infections than do other structures containing such an extent of mucous surface.

It is true that the greater number are post-gonorrheal in the sense that the gonococcus having been once present has died out and the inflammatory condition has been perpetuated by secondary bacterial invaders upon a previously prepared mucosa. It must also be remembered that while true gonorrheal prostatitis in the vast majority of cases seems to be a self limited disease there are those patients in whom the gonococcus remains in the absence of proper treatment for months or years. Though the gonococcus may have died out, the prostate almost invariably continues to harbor an infection of some type, which infection rarely, if ever, spontaneously disappears.

One of the most interesting features of chronic gonorrheal infection is the general disappearance of the gonococcus and its frequent replacement by other bacteria, particularly staphylococcus albus and streptococcus. This has been many times demonstrated in chronic seminal vesiculitis. Many cases of chronic rheumatism, arthritis, myositis, endocarditis, neuritis and other lesions have been generally improved by operation for drainage or extirpation of the seminal vesicles. The same may be said of the prostate and the verumontanum. The entire seminal tract may also be a frequent focus of infection for tuberculosis and other suppurative processes. The streptococcus seems to be rarely present as a post-gonorrheal secondary invader but to be more common after tonsillar or dental infections. By far the greater number of prostatic secretions show a preponderance of staphylococci.

Pelouze in 1921 reported six cases of focal infection of the prostate as follows:

First, that of a man 41 years of age, who had never had any venereal diseases, although he had been treated for a prostatic congestion in 1917. In the first part of 1920 he was incapacitated for 11 weeks by a multiple arthritis which subsided after the extraction of 7 teeth. In September, 1920, he complained of a neuritis over his lower costal region,

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characterized by a severe pain coming on about four in the morning and causing him to arise. For a longer period he had had a constant pain in his upper lumbar region. Prostatic study showed that structure to be large, boggy and tender and its secretion to contain about 20% of pus. Prostatic massage was instituted and for a few weeks each seance was followed by generalized joint pains and stiffness, lasting several days at first and gradually becoming less until they disappeared altogether. After two weeks of such treatment the costal pains disappeared altogether and the backache was entirely gone after the sixth week. The patient stated that he felt better than he had for twelve years.

The second patient was a man of 28 who had had an attack of gonorrhea in 1917 and had been pronounced cured. In November, 1919, he sought advice for a morning urethral discharge and an arthritis of both knees and both ankles. He was given the same kind of treatment. All pain and stiffness disappeared after the third treatment.

The third case was a man of 45 years who had had gonorrhea at 18. Early in 1920 he developed an annoying pain in the left arm and shoulder for which his physician had given oral and local treatment for almost a year. When the author saw this patient the arm was acutely painful and he was unable to raise it above his head. At the end of three weeks of treatment all pain had entirely disappeared and has not returned.

The fourth case was a man of 52 years who had recurring attacks of pain and swelling of his ankles and knees during the preceding four years. He denied venereal disease and his teeth and tonsils were negative as was also his gonococcus fixation test. His prostate was large and its secretion contained much pus. On the night of his examination he had two chills and his temperature went from normal to 104 degrees, returning to normal on the following day. His pain and swelling subsided but an x-ray of the knee showed a chronic hypertrophic change

which probably accounted for his lingering joint stiffness.

The fifth case was that of a man aged 50 years who developed a multiple arthritis in July, 1919. His pain and disability were such that he was totally incapacitated in December of that year. The x-ray had revealed three abscessed teeth which had been removed without benefit. He was bed-ridden with greatly swollen knees and ankles and his calf and leg muscles were greatly wasted. His prostate was broad, soft and flat and its secretion was almost pure pus. Following his first few prostatic massages there was such a great increase in his pain that opiates were necessary. These reactions quickly decreased and after three weeks he was removed to his home, free of his constant pain and experiencing only occasional attacks which entirely stopped within six weeks. The joint swelling rather quickly disappeared though it took some months to regain his strength and agility. He later stated that he weighs 30 lbs. more than when he left the hospital and states that he is perfectly well.

The sixth case was a man of 27 years, who had had gonorrheal arthritis in Nov., 1916, which lasted about five months. He then had no difficulty until July, 1919, when his right knee and both ankles became painful and swollen. A short time after this he developed a frequent sharp pain over the lower anterior part of the chest when he breathed deeply. This latter was worse at night. When seen by the author, February 7, 1921, he had lost 35 lbs. and stated that he had not had a full night's sleep for a year and a half. The right knee and both ankles were swollen, painful and tender and both plantar arches were broken down. An x-ray of his teeth was negative for dental abscesses. The prostate was small, not tender, and its secretion showed about 75% of pus. There was a marked increase of his symptoms following his first few treatments, but these soon disappeared. On February 21, 1921, he stated that his pain was entirely gone and that he was able to sleep at night.

A PUS CASE OF UNDETERMINED ORIGIN*

H. Hapeman, M. D., F. A. C. S., Minden, Nebr.

I first saw this patient in consultation with a physician who was unable to give me a connected history of the case because she had been somewhat of an invalid for a considerable time and had been treated by various physicians. The case had evidently been a puzzling one and the diagnosis consequently rather varied.

The patient was a woman of about thirty years of age, mother of four children. She was well nourished, face flushed, restless, temperature 100.4°, pulse 92, respiration 20, nauseated and suffering severe pain at lower margin of ribs, over cardiac end of stomach. At one p. m., the time of my first visit, she had just been catheterized securing four ounces of urine and had received a hypodermic of morphia, strychnine and atropine. Previous to my visit the stools had been strained through cheese cloth secur-

ing what resembled three small gall stones.

She gave a history of repeated attacks of severe pain in region of the gall bladder. Within the next two hours a small tumor developed at the location of the pain and the temperature reached 104.8°. By eight-thirty p. m., seven hours after my first visit, the temperature was 104° and pulse 120 and the tumor rapidly increasing in size. At 10 p. m. the temperature was still 104°, pulse 120, face deeply flushed, pain very severe. The tumor had now become the size of a man's fist and the patient evidently rapidly losing ground. After a consultation between four of us we arrived at the unanimous conclusion that we did not know what was the matter with the patient, but decided that an exploratory incision was imperative. A vertical incision was made directly over the apex of the tumor and when the peritoneum was opened the stomach immediately protruded completely filling the opening. The stomach vessels were enlarged to several times their

*Read before Republican Valley and 10th Councilor District Medical Society at Minden, Nebr., May 29th, 1924.

normal diameter and the stomach was adherent to the abdominal wall on all sides of the incision.

Toward the pyloric end of the stomach the adhesions were so dense that they could not be separated but to the left side and slightly downward, by blunt dissection with the finger, they were separated so that the finger passed behind the margin of the stomach.

At this point a large abscess was encountered which discharged what we estimated to be not less than three pints of pus, which contained large numbers of fatty flakes such as are characteristic of abscess of the pancreas. The abscess was completely drained, a stab wound made through the left side and a drainage tube carried through it to the bottom of the cavity. A hypodermic of morphia was given and one quart of normal saline by rectum. The operation was completed at one a. m. and at six a. m. temperature 103.4°, pulse 116, resp. 26, pain diminished and patient resting fairly well, strychnia given hypodermically and normal saline repeated. By seven a. m. of the second morning the temperature had fallen to 101.4°, pulse 112, resp. 20 and patient comfortable. At seven a. m. of the third morning temperature 98.8°, pulse 92, respiration 20, stools free. From this time until the eleventh day but little change was noticed excepting one day, the nurse's report does not give the date, the drainage tube became obstructed and the doctor in charge extracted from the wound a piece of blackened and hardened glandular tissue two inches in length and resembling a piece of the tail of the pancreas, after which the drainage was free. On the eleventh day after the operation the doctor in charge was called away and the patient was placed under my care. The discharge had now apparently become free from pus and had the appearance of normal glandular secretion. Where this secretion came in contact with the skin about the drainage tube it digested the surface of the skin and caused an ulcerated surface to extend rapidly out from the wound. The rapidity of its advance and the severity of the inflammation which accompanied it became alarming. We washed the surface with alcohol, applied boracic acid, stearate of zinc, vaseline, covered the surface with oiled silk, sealed the oiled silk around the edge of the wound with collodion all to no avail. At last the surface was washed with alcohol and then painted with paraffin after which it healed promptly.

On the 27th day after the operation the patient was able to sit up in a chair. From this time the recovery was uninterrupted excepting when the small drainage tube would get out. At these times the pain would become very severe until drainage was again established. The patient returned to her home and was able to again perform her usual household duties until one year later when she suffered a severe attack of pain over the region of the gall bladder.

As this persisted and her condition grew rapidly worse we made an incision over the gall bladder and removed thirty-eight gall stones. From this operation she made a normal recovery and is now able to care for her household. The fistula closed about January first of this year and has remained closed since that time. She is apparently in perfect health at this time.

AN EXPEDIENT TO CONTROL EPISTAXIS

Joseph G. Levine, New York (Journal A. M. A., Jan. 19, 1924), stops this bleeding by the use of an ordinary rubber finger-cot about the size of the index finger or smaller. Its exterior is covered with a bland lubricating jelly to make the insertion and removal easy; then it is grasped with the nasal forceps and inserted into the bleeding nasal cavity, the blind pouch end foremost, as far as it will go, with the open end just protruding from the nasal orifice. A one-half inch strip of plain gauze is then packed into the rubber encasement as firmly as possible with the nasal forceps, while the finger-cot is held from sliding in. The bleeding is effectively controlled, because the gauze packing cannot become blood soaked and loosen, while the elasticity of the distended finger-cot distributes the force of pressure evenly in all directions. It is not necessary to remove this packing within twenty-four hours, because the protection afforded by the rubber finger-cot to the gauze prevents it from soaking up sapremic exudates and blood that often induce infection of the bleeding site and promote further hemorrhage. The removal of the packing is simple and not discomforting. One first removes the gauze, and then slides out the finger-cot.

ADIPOSIS DOLOROSA, 300 B. C.

LeRoy Crummer, Omaha (Journal A. M. A., May 3, 1924), publishes pictures of a terra cotta grotesque of a case of adiposis dolorosa that he believes dates back to 300 B. C. He is convinced that it is a votive offering. These votive offerings afford evidence concerning the peculiar mixture of belief and superstition, and of dependence, which has always the determining factor in the relationship between physician and patient. This figure is of a period when the classical style in modeling had yielded to a more naturalistic form. The donarium illustrated here was found at Athens in the excavations of 1914, and has been ascribed to the third century before Christ. It is a pure terra cotta, is polychrome, and stands 12 cm. high. It is a perfectly typical reproduction of a case of adiposis dolorosa. Crummer assumes that this effigy was made and sent in the form of a petition to the gods of health rather than as an expression of thankfulness for relief of the symptoms. A similar clinical case is cited to bring to mind the motivation for the modeling of this old grotesque.

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STATE MEDICAL LEAGUES

Out of what is thought to be unsatisfactory functioning in some respects of state medical associations, has developed the medical league idea. A number of states, notably, California, Ohio and Maine, have organized state medical leagues to further the interests of scientific medicine by campaigns of education. Other states, notably Iowa, have attempted to attack the problem in various ways. In Nebraska we have a campaign committee and a publicity committee to cover the field. Perhaps it is too early to form conclusions about the functioning of the committees and of the results obtained or to be expected.

The Washington State Medical League was organized several years ago to teach the laity the value of, and to protect, scientific medicine. The organizers felt that the state medical organization devoted its energies to scientific medicine to the exclusion of the greater problems of the profession. The League is not connected with the state association except by contact committees. Over half of the physicians of the state and over 600 laymen interested in scientific medicine, are members. The membership dues are \$25.00 per year. A full time paid director is employed through whose direction the league functions. It is non-partisan but it is interesting to note that last year 5 physicians were elected to the legislature and 8 or 10 candidates for the legislature not agreeable to the league, were defeated. One of the shrewdest politicians in the state says the

Washington State Medical League is a body to be reckoned with in politics hereafter. To an outsider it looks as if this body were really functioning.

It was explained to your editor that a part of the history of state medical societies has been that legislative committees, campaign committees, publicity committees, have been appointed, have been considerably puffed up over recognition by their appointment, have gone to sleep as soon as the annual meeting was over, have been rudely awakened by the secretary on the approach of the next annual meeting, have hurriedly written rather flamboyant reports which were read before the annual meeting and ordered placed on file — and that was about all the movements ever accomplished.

This sounds rather familiar to the editor—does it remind the reader of anything?

MENTAL DISEASE AND CRIME

The tragic and pitiful story of the Frank's case has startled society with its revelations of depravity on the part of two young men of high intellectual attainments.

The trial of these youths for murder with the introduction by the defense of medical testimony to mitigate the legal penalty for the admitted guilt brings out again the lack of conformity that exists between the concepts of modern psychiatry and the legal standards of crime and its punishment.

The definition of legal insanity as constituting exemption from punishment is that to escape responsibility for a criminal act the individual must have a diseased mind, which at the time of committing the act, rendered him incapable of knowing the nature and consequences of his act and of distinguishing right from wrong. This rule first formulated in England in 1841 constitutes the law in both England and the United States. It emphasizes the intellectual or cognitive element of our minds and disregards the emotional or affective factor in relation to criminal acts. Without the possession of normally developed affects or emotions we lack the will to direct our activities in normal lines and to inhibit the criminal impulses that on occasion may arise.

With this disregard of the affective component of our psyche the above legal definition of insanity fails in many cases to give adequate recognition and protection to the unfortunate psychopath who by reason of

his defective constitutional endowments, or faulty character developed finds himself, though conscious of his wrong doing, incapable of massing social or altruistic feelings against the performance of the criminal act to which he is tempted.

The law assumes a rigid standard of social conduct, an understanding by the individual of his social obligations and a freedom of will in making his choice of conduct. Psychiatric experience in the investigation of delinquency and crime as well as in the study of mental disease in its more narrow implications reveals that the legal assumptions are not founded on real facts. Freedom of will does not exist in actual life, as cold experience teaches us that our daily actions are the result of preexisting emotional or affective trends which have been developed by life experiences from infancy on and which according to the nature of the situational stimulus determine the character of the act. An individual may theoretically and correctly conceive the nature of his social obligation but, owing to a defective emotional development may be incapable of its realization.

It is necessary for the preservation and development of our social order that laws and punishment be maintained. It would seem that as our psychiatric knowledge of personality and behavior widens and well founded principles become established, that the present code of legal procedure in reference to crime and punishment must be modified to harmonize with scientific facts. Crime rather than the criminal must be penalized; the suppression of the criminal idea or the criminal act rather than of the whole personality harboring the idea should be the goal aimed at. Punishment, for the suppression of the criminal idea and act, should be meted out on the basis of the strength of the criminal tendency in the individual rather than on the act itself. A habitual criminal or recidivist with a defective mental equipment requires different treatment from that accorded a man who, endowed with a constitutionally normal brain, on account of environmental influences, has succumbed to temptation. While the latter's personality may undergo reconstruction and he be restored to society, the former should be placed in a penal colony for life.

Such a transformation of the processes of law would require a properly equipped psy-

chiatric unit or clinic in conjunction with the courts of our large cities, having an advisory function based upon adequate psychometric and psychiatric examinations of the offender. Out of the work of such disinterested clinics rules of procedure would gradually be evolved that would prevent the emotional travesties of justice that so frequently disgrace our criminal courts.

In the Frank's case the testimony of such reputable men as Drs. White, Healey and Glueck goes far in establishing the psychopathic types of Leopold and Loeb. They are not insane in the legal sense; psychologically, they are egocentric, egotistic, sexually perverse and incapable of moral inhibition. They should be imprisoned or incarcerated for life.

The lesson for society, in view of the details of the Loeb personality so far brought to light, lies in the importance of childhood training. Phantasy production is a normal part of the child mind, appearing to have its source in the instinctive or affective needs of the organism. In early childhood phantasy is quite unmoral. This phantasy life should be carefully supervised and through understanding cooperation on the part of the parents and teachers be led into productive contact with healthy activities. A real moral backbone is so developed which is the best safeguard against later delinquency. The home is the place for this training and it requires self sacrifice on the part of the parent as well as on that of the child. Our present rapid pace of living with its disintegration of home life has undoubtedly conduced to the disastrous fate of Loeb and Leopold.

—G. Alexander Young.

MISUSE OF INSULIN

We are told, insulin has fallen into disrepute in some localities. Two cases seen by us recently point directly to a reason. Briefly they are as follows: The first case was a young man whose father had died of diabetes just about the time the newspapers first heralded the discovery of a cure for that disease. Later this young man learned that he himself was a diabetic and went immediately to consult a specialist in the treatment of diabetes with insulin. He was placed in a hospital for two weeks, paid a specialist's fee to his doctor beside hospital and laboratory bills and was sent home taking 50 units of insulin a day, but having had almost no instruction concerning diet, urine

examinations, etc. Needless to say he was soon in trouble and had a stormy time. By establishing his tolerance it was found that he needed no insulin to control his diabetes.

The second case was also a young man who knew that he had diabetes and after reading about insulin went to his family doctor asking that he be given some of it. His doctor tried to discourage him and put him off for several weeks. Later he 'phoned to say he has received a supply and was now ready to give it to the patient. He arranged to give it in his office, three times a week. The result was several severe reactions and the verdict that insulin was unsafe.

After all that has been done and written to instruct physicians in the use of insulin and to make it safe for their patients, surely there is no excuse for such things as the above.

—E. S. Wegner.

INTRAVENOUS THERAPY

There is no better evidence of the readiness with which the medical profession takes up new fads than the avidity with which it accepted the commercially sponsored method of administering all sorts of medicaments by the vein. As a fad intravenous medication is just now approaching its zenith. Some few years ago this method was confined strictly to a few remedies of proved worth, such as the arsphenamines, which were not suitable to other methods of administration. Today, everything from epsom salts to camphorated oil finds its way into the vein.

The claim that the intravenous is the ideal method of drug administration finds its adherents more among those trying to make the method popular with the physician, than among physicians themselves.

The elimination of soluble substances injected intravenously is not very appreciably shorter than the elimination of the same substances injected intramuscularly; and in many cases rapid elimination is not desirable. If we discount the direct bactericidal action of drugs, which in fact plays a minor roll in the therapeutic effect of the great majority of drugs administered parenterally, it is difficult to see why intravenous injection should have any advantage over subcutaneous or intramuscular injection, except perhaps that in some cases the latter methods are more painful. And it must not be forgotten that the intravenous injection of

many drugs may be accompanied by grave dangers.

There will, no doubt, always be a legitimate field for intravenous therapy. Blood transfusion, the injection of normal salt solution and other so-called physiologic solutions in cases of shock, coma, etc., are life-saving measures universally accepted. Salicylates and their derivatives and substitutes should be given by the vein in cases where vomiting precludes their oral administration, and rectal administration is found impractical. The arsphenamines are now being adapted to intramuscular injection, and if this route proves to be as valuable therapeutically and as painless as is claimed, there should be no excuse for injecting these dangerous drugs into the vein.

The writer remembers very well that he wrote several articles a few years ago on the value of intravenous injection of mercury, and does not wish to be reminded of the fact by readers who may have read them. He also feels that he has passed the age of credulity, and now lives in the age of reason. So please save your reminders.

—Carl H. Bastron.

A STATE MEDICAL CIRCULATING LIBRARY

In the June number of this Journal Dr. Leroy Crummer called attention to the facilities offered to the profession by the library of the University of Nebraska College of Medicine. The Nebraska profession has not been educated up to the point of making the greatest use of this library. It may be well then to supplement what has been said in a statement issued by the Iowa State Library:

The Medical Department of the Iowa State Library is for the use of physicians all over the state.

Books or periodicals will be furnished, direct or by mail, to anyone who asks for them. Bibliographies on special subjects will be prepared and available literature furnished. Any material which is not in the library will be borrowed from the Surgeon General's Library at Washington, D. C., the borrower paying all transportation charges.

Any physician who wishes to receive regularly any periodical material will be listed for as many journals as he desires, and they will be sent to him as they are received in the library.

This offer includes Tice's International Medical Digest issued monthly, the Medical Interpreter, published quarterly, which contains abstracts of foreign and domestic literature, and the International Survey, composed of abstracts, which is published monthly by the American Institute of Medicine.

The period of loan on all books and periodicals is two weeks. Books may be renewed upon request if there are no other calls for them, but, ow-

ing to the great demand, periodicals must be returned within the time limit.

The borrower is requested to pay postage if material is sent by mail.

The Iowa State Medical Library is to have an exhibit at the meeting of the Medical Society of the Missouri Valley in Des Moines this fall, and we shall be glad to have you call our exhibit to the attention of the physicians through your State Journal.

This is the only State Medical Circulating Library in the United States which functions in this way, and we think the doctors will be interested in having the service explained to them.

PARADOXICAL SHORTENING OF THE COAGULATION TIME OF THE BLOOD AFTER INTRAVENOUS ADMINISTRATION OF SODIUM CITRATE

Sodium citrate renders blood incoagulable when the two are mixed in proper proportions in a test tube. Rosenthal and Baehr (Archives of Internal Medicine, May, 1924) have observed a paradoxical shortening of the coagulation time of the blood in human beings following transfusion of citrated blood. During the last four years they have repeatedly employed this means of arresting secondary hemorrhages in variety of conditions such as gastric ulcer, pulmonary tuberculosis, cerebral hemorrhage, typhoid fever, excessive bleeding from a tooth socket following extraction and after tonsillectomy. From 3 to 6 c.c. of a 30% solution of sodium citrate (3 to 6 gm.) has usually been administered very slowly, taking from 10 to 15 minutes for completion.

EDITORIAL PARAGRAPHS

All the crime in the world is the work of less than two per cent of the population.

Kipling speaks of "Howling Provincialism". That expresses it exactly. The editor always knew we had it, but did not know how to say it.

New advertisers this month are: Maul Bros., Printing Co., Capital Engraving Co., Quincy X-ray and Radium Co., and the Midwest Optical Co.

A publisher sent out 15,000 questionnaires asking people their preferences. Nine thousand replied with suggestions of all kinds, but history was given first place, fiction second and science third.

The Red Cross has undertaken to prepare women of leisure to teach Braille to the Blind. The significance of this can hardly be appreciated by the average person who has not lived with the sightless.

It is not an evidence of good breeding to pick the teeth in the presence of company; but it is all right to smoke cigarettes before, during and after meals in the presence of anybody, male or female!

A very creditable symposium on focal infection given before the Republican Valley and Tenth Councilor District Medical Society is published in this number. It reflects credit alike on authors and the society.

And now a Maine man has coughed up a lizard after several weeks of uneasy feeling at the stomach. We've heard of people having snakes before this; but hereafter let the physician keep the possibility of the lizard in mind. These reptiles are to be found around stills.

The State Compensation Commissioner has ruled that when a doctor's bill is disputed it does not become due until passed upon by the compensation department. This ruling was made in a case in which interest on the account was claimed.

Let it be known that Dr. Morris Nielsen, President, Nebraska State Medical association has attended more local and district medical society meetings during the year than any of his predecessors have attended in all the years that are gone.

To prevent confusion of the medical doctor with the various cultists who have the right to prefix the title "Dr." to their names, the California State Medical Society suggests that its members add the suffix "M. D." to their names on their door plates, windows and hanging signs in front of offices. A splendid idea. Let us do likewise.

A peculiar situation developed in connection with the newly completed U. S. Veterans hospital, American Lake, Wash. The institution is composed of about 25 beautiful buildings situated in the piney woods and on the border of the lake, perhaps ten miles from Tacoma. Heretofore the 175 veterans have been cared for at the Cushman hospital, a transformed Indian School of a dozen buildings in the outskirts of Tacoma, a very homelike place. The veterans about to be transferred declined to be moved to the new place on the plea that they were satisfied where they were located. Apparently the lure of the city appealed stronger than the new institution miles away from the city.

WAYSIDE GLEANINGS ON A MID-SUMMER JAUNT

A long felt desire of the editor to see something of the Puget Sound country was gratified last month by a short excursion to the northwest. Tacoma was the principal objective because of family ties, but other places also were visited. The immensity of the evergreen forests, the enormous saw mills and the coastwise shipping make a profound impression on the traveller. The fruit and berry farms literally make ones "mouth water", especially when one is privileged to shed his coat and pick loganberries four times as big as any ever seen on the Nebraska markets (for they shrink in transit). The few Holstein cattle we nowadays see in Nebraska are but reminders of the herds of dairy cattle we have heretofore seen in the states east of the Mississippi; but the great northwest also is full of them, for dairying is a great industry in the valleys tributary to Puget Sound. All the cities looked prosperous. Portland has 300,000 people, Tacoma 130,000, Seattle 388,000. Portland is the most appealing city, Seattle probably has the greatest future because of the possibilities in Alaskan and Far Eastern trade. Victoria on Vancouver Island, B. C., is a quaint city of 60,000 with a strange flora of tree and flower, houses and people somewhat English and yet very much American.

Mt. Rainier or Mt. Tacoma is the great attraction in the Northwest as the Yellowstone is to Nebraskans. It is over 14,000 feet high and the hotel in Paradise valley is halfway to the top, and at the end of the auto road. To stand in the August presence of Nisqually glacier and within a few feet of it is somewhat of a treat. Mt. Rainier has about 20 glaciers. More people passed the gateway to Mt. Rainier last year than entered the Yellowstone.

The hospitals and the medical profession of the sections visited are the equals of those anywhere. We were privileged to see very fine operating in Tacoma by Dr. H. J. Whitacre.

Of former Nebraska physicians we saw only four: Dr. S. J. Bridenstine, Seattle, who from about 1875 to about 1889 was located at Madison and its first regular physician; Dr. E. A. Weir, for many years a practitioner at Chadron and later at Hastings who is now in the Public Health Service in an executive capacity, in Portland; Dr. J. S. Smeall, a prosperous Tacoma physician and surgeon, a Dodge, Nebr., product, and Dr. Thomas H. Long, Tacoma, the writer's brother.

Finally, just to show that the unexpected happens and that the world is really pretty small, the writer will state that he quite unexpectedly run up against Dr. Allan Craig, Chicago, associate director, American College of Surgeons, in the Portland Hotel, Portland.

MEDICAL SOCIETY OF THE MISSOURI VALLEY

Des Moines, September 17, 18, 19, 1924

Preliminary Program

Diagnostic Clinics Will Be Held Wednesday, Thursday and Friday Mornings

President's Address.....Dr. H. J. Lehnhoff, Lincoln
"Cataracts: Treatment with a Subconjunctival Injection of Cyanide of Mercury".....

.....Dr. F. W. Dean, Council Bluffs
"Experience With Parasitic Diseases of the Intestines".....Dr. J. M. Mayhew, Lincoln

"Infantile Paralysis", illustrated by moving pictures
Drs. Frank Dickson and Rev. L. Dively, Kansas City
"Goiter and Its Treatment" (lantern slides).....

.....Dr. E. P. Sloan, Bloomington, Ill.
Surgical Symposium: "Primary and Complemental Jejunostomy in the Treatment of Ileus"

"Surgical Mile Stones in the Treatment of Ileus"
.....Dr. A. R. Mitchell, Lincoln

"Fundamental Principles in the Surgical Treatment of Acute Ileus".....Dr. A. I. McKinnon, Lincoln

"The Toxin in Acute Ileus", Dr. H.H. Everett, Lincoln

"Complementary Jejunostomy in the Treatment of Potential Ileus".....Dr. Czar C. Johnson, Lincoln

Discussion opened by Dr. Jno. E. Summers

Symposium: "Tumors of the Breast"

"Surgical Viewpoint"
.....Dr. Wm. Jepson, Sioux City, Ia., Surgery

"As He Sees Them".....
Dr. V. L. Treynor, Council Bluffs, Iowa, Internal Medicine

"As He Sees Them".....
Dr. J. C. Waterman, Burke, So. Dak., General Practitioner.

"X-ray".....Dr. A. P. Overgaard, Omaha, Neb.

Discussion opened by Dr. Donald Macrae

Symposium: "Diabetes"

"The Nature of the Diabetic Metabolic Anomaly"
.....Dr. Geo. H. Hoxie, Kansas City

"The Dietetic Management of Diabetes".....
.....Dr. C. C. Hubby, Battle Creek, Mich.

"Insulin".....Dr. L. H. Fuson, St. Joseph

"Borderland Cases".....Dr. J. M. Bell, St. Joseph

Discussion opened by Dr. A. D. Dunn

"The Uses of Radium from a Surgical Standpoint"
.....Dr. Paul A. White, Davenport, Iowa

"Knee-Joint Injuries and Their Management".....
.....Dr. Philip Kreuscher, Chicago, Ill.

TRI-STATE DISTRICT MEDICAL ASSOCIATION

The Inter-State Post Graduate Assembly, directed by the Tri-State District Medical Association, extends a hearty invitation to the physicians of America, who are in good standing in their State or Provincial Societies, to attend the annual assembly, which is to be held at Milwaukee, Wisconsin, October 27th, 28th, 29th, 30th and 31st — five full days of post graduate work.

Seventy-five of the leading medical men of the country, north, east, south, west and the middle, have signified their intention to be present and to participate in the program.

THE SOCIETIES

The Joint Meeting of the Eighth Councilor District and Holt County Medical Societies was held at Long Pine, May 7. The following program was carried out:

"Report of a Case of Enlarged Thymus", Dr. Hugh O'Donnell, Springview; "Report of a Case of Sporotrichosis", Dr. J. F. Gardiner, Stuart; "Personal Observations", Dr. W. J. Douglas, Atkinson; "The Doctor and the Dead Beat", Dr. Chas. H. Root, Bassett; "Industrial Disabilities", Dr. Czar C. Johnson, Lincoln.

Noon luncheon given by the Long Pine Commercial Club.

The annual meeting of the "5-Counties" Medical Society was held at Hartington, July 14, and was attended by about thirty-five physicians. Papers

were presented by Dr. J. M. O'Connell, Ponca; Dr. B. F. Gleason, Randolph; Dr. F. G. Dewey, Coleridge; and Dr. J. W. King, Hartington. A medical credit association was organized to assist in collecting fees.

Tuesday evening, July 15, Dr. J. T. Byers and Dr. Frank T. Hamilton acted as host to the Saline County Medical Society and the physicians of the surrounding towns, at Friend. In addition to a dinner and a smoker, papers were given by Dr. S. G. Zemer, Lincoln, and Dr. C. A. Arnold, Lincoln, the subject being "Infection of the Nasal Passages".

A lecture by Dr. Karl Connell, Omaha, on "Diseases of the Gall Bladder" and by Dr. Adolph Sachs, Omaha, on "Carcinoma of the Colon" were given before the Otoe County Medical Society at Nebraska City, July 17th. A round table and an informal discussion of many matters was held.

HUMAN INTEREST TALES

Dr. H. Elston of Omaha has located at Creston.

Dr. F. A. Mountford, has located at Davenport, Nebr.

Dr. Thos. Dorwart, a Friend product, has located at Chappell.

Dr. Fritz Denneman, recently from Omaha, has located at Butte.

A general hospital is to be opened at Nebraska City by two nurses.

Dr. J. G. Bartek, has become associated with Dr. J. G. Smith, Wahoo.

Dr. G. W. Pugsley, Persia, Iowa, is about to locate at Bayard, Nebr.

Dr. and Mrs. A. S. Knode, Omaha, enjoyed an outing at Lake Okoboji.

Dr. and Mrs. H. E. Flansburg, Lincoln, spent a month at Cass Lake, Minn.

Dr. F. A. Pollock and family, Norfolk, motored to Yellowstone Park in August.

Dr. and Mrs. Irving S. Cutter, Omaha, motored to the Minnesota Lakes in August.

Dr. C. A. Lutgen has again taken over the Auburn hospital and will conduct it.

Dr. and Mrs. J. S. Van Keuren, Omaha, spent part of the summer at Lake Okoboji.

Dr. Chas. H. Breuer and family, Lincoln, have spent the summer at Nederland, Colo.

Dr. J. B. Williams, Beaver Crossing, has sold his intangibles and will locate in Oregon.

Dr. G. R. Gilbert, Omaha, was arrested by Council Bluffs authorities for selling narcotics.

A Lincoln surgeon has been sued for malpractice, the case involving a broken leg and \$20,000.

Dr. W. O. Bridges and Dr. F. N. Conner, Omaha, motored to the Wisconsin Lakes last month.

Dr. C. W. Jester has moved from Doniphan to Lincoln, ill health necessitating the change.

The Columbus hospital was sold under foreclosure to the Home Builders of Omaha, mortgagees.

Dr. Albert Schwedhelm, recent interne at St. Joseph's hospital, Omaha, has located at Creighton.

Dr. A. G. Dow, Omaha, spent the month of August taking a course at the Children's Hospital, Chicago.

Dr. and Mrs. T. C. Moyer, Lincoln, made an auto trip to Elbow Lake, Minn., during July and August.

Dr. and Mrs. D. T. Quigley, Omaha, motored to Lake Madison and other points in South Dakota, last month.

Dr. G. W. Fegers, Nebraska, was seriously shock-

ed while using the telephone during an electrical storm.

Dr. Clarence Minnick, formerly of Curtis, has become associated with Drs. Kee and Stewart, Cambridge.

Dr. E. J. Mitchell and family, Scottsbluff, toured the central west during the latter part of July and August.

Dr. W. C. Zulauf, who has been engaged in practice at Long Pine since last fall, has located at Beemer.

Dr. Carl H. Bastron, Lincoln, is about to locate at Portland, Oregon, in an effort to "dodge" ragweed fever.

Dr. Clyde Moore, Omaha, was called to Los Angeles last month by the illness of his father, Dr. J. C. Moore.

The Sacred Heart hospital of Lynch has become the property of the Benedictine Sisters who have remodelled it.

It is reported that the new West Nebraska Methodist hospital, Scottsbluff, averages from 35 to 45 patients daily.

\$35,000 damages is claimed by a patient of an Omaha surgeon on account of an alleged forgotten piece of gauze.

The Chicago Eye, Ear, Nose and Throat College is now offering a two years' graded course in the above specialty.

Dr. R. B. Adams, secretary-treasurer, Nebraska State Medical association, spent his vacation at Deerwood, Minn.

Dr. Emelia H. Brandt, Omaha, spent the month of August at Estes Park, Colo., as physician to the Y. W. C. A. Camp.

Dr. and Mrs. F. S. Owen, Omaha, have returned from their California home at Montecito after a stay of some months.

The Rockefeller Foundation is giving one million to the Tokio Imperial university, which suffered in the recent earthquake.

Dr. A. N. Howley, wife and daughter, Norfolk, returned from a motor trip to points on the Atlantic Coast early in August.

Dr. John Parsons, a resident of Omaha for forty-five years, was sentenced to the penitentiary for one year for selling narcotics.

Dr. E. R. Roche, Sidney, took his family by motor to Dubuque, Iowa, for a visit while he spent a month at the Mayo Clinic.

Dr. Warren Thompson, Omaha, and his brother, Dr. Richard Thompson, New York City, enjoyed a fishing trip to Creede, Colo.

Dr. F. A. Edwards, Omaha, was sentenced to the penitentiary for five years on an abortion charge. The case has been appealed.

Dr. and Mrs. John B. Potts, Omaha, have gone to Europe, where the doctor will spend about three months taking special work.

Dr. K. S. J. Hohlen, Lincoln, accompanied by family and friends seduced the elusive bass in the lakes of the upper Elkhorn in July.

Dr. W. L. Albin, Lincoln, who with his family has spent a year in Vienna, while the doctor attended the clinics, have returned to Lincoln.

The Presbyterian hospital, Omaha, has been closed, temporarily at least, the overhead expenses being too high to maintain the institution.

Dr. J. A. Waggener, Humboldt, has practiced in

Richardson county forty-six years and is the county's oldest practitioner in point of service.

Dr. Hans Hansen, Logan, Iowa, a "Creighton medical" graduate of 1905, has been appointed head of the new veterans hospital at St. Cloud, Minn.

Dr. Homer Davis, Genoa, while operating an x-ray machine, suffered a shock rendering him unconscious for some time, and severely injuring him.

Dr. Jennie Callfas, Omaha, National Democratic committeewoman, attended the notification ceremonies of Hon. John W. Davis, Clarksburg, W. Va.

A new staff organization was perfected at the Falls City hospital and a free clinic was given July 31st. Sixty patients responded to the clinic invitation.

Major General E. H. Crowder was in Omaha recently, the guest of Dr. W. O. Bridges, and a dinner was given in his honor at the Omaha Country club.

The marriage, July 23, of Dr. R. H. Whitham, Boston, and Miss Eleanore Fogg, Lincoln, is announced. Dr. Whitham grew to manhood at Fairfield, Nebr.

Dr. Leslie Field, Omaha, serving a penitentiary sentence for abortion has been paroled. He is said to be tubercular and the parole was presumably granted on this ground.

Dr. and Mrs. W. O. Colburn, Lincoln, left July 25th, for a trip through the Black Hills and Wyoming, returning September 1st by the way of Estes Park. They report a fine time.

Dr. F. G. Folken, a Colfax county product, a practitioner at Albert Lea, Minn., the past five years, with his family, visited at Schuyler last month. Dr. Folken is about to go to Vienna to take special work in the OALR specialty.

"Who's Who in America" for 1924, lists 206 Nebraskans, among the number being Dr. C. P. For-dyce, Falls City, councilor for the third district Nebraska State Medical association and author of "Trail Craft" and "Touring Afoot".

Dr. H. Douglas Singer, Chicago, prominently mentioned expert witness for the prosecution in the Leopold-Loeb trial, some years ago was in institutional work in Nebraska. He was an assistant physician at the Norfolk State hospital for a time, and we believe also at the Lincoln institution. Later he practiced neurology and psychiatry in Omaha. When Dr. J. L. Greene of Lincoln became superintendent of the Illinois State hospital at Kankakee, he took Dr. Singer with him as one of the assistant physicians.

NECROLOGICAL

Dr. Frank C. Genung, Wausa, Nebr.; Chicago Medical College, 1891; since 1892 a practitioner at Wausa; captain in the medical corps U. S. A. during the World War, stationed at Ft. Leavenworth and Jefferson Barracks; a thirty-second degree Mason; after having apparently recovered from a severe illness died rather suddenly July 27th, while visiting at the home of his daughter, aged 58 years. He was buried with military honors by the American Legion and the impressive -Masonic burial service was given at the grave.

Dr. Charles W. Ervin, Rush Medical College, 1901; a practitioner at Lincoln for about twelve years until chronic nephritis induced him to change vocations, since which time he has resided at various

places, died at Los Angeles, July 15, aged about forty-five years. The remains were buried at Pawnee City.

Dr. J. C. Schminke, New York City; College of Physicians and Surgeons, Keokuk, 1877; Long Island College Hospital, Brooklyn, 1882; a member of a well known Nebraska City family and a practitioner at Nebraska City in the eighties; an obstetrician and pediatrician in New York City for many years, died early in August, aged about 74.

BOOKS RECEIVED

NATIONAL HEALTH SERIES. LOVE AND MARRIAGE. By T. W. Galloway, Ph. D. TUBERCULOSIS. By Linsly R. Williams, M. D. VENEREAL DISEASES. By William F. Snow, M. D. THE EXPECTANT MOTHER. By R. L. DeNormandie, M. D., F. A. C. S. 18 mo. Flexible Fabricoid. Average number of pages 70. Price per volume 30c. Per set \$6.00. Funk & Wagnalls Co., New York, 1924.

EAT YOUR WAY TO HEALTH. By Robert Hugh Rose, A. B., M. D. 12 mo. Cloth. 246 pages. Price \$2.00. Funk & Wagnalls Co. New York. 1924.

THE INTERNAL SECRECTIONS. By Dr. Arthur Weil. Cloth. Pages 282 with illustrations. The Macmillan Co. New York, 1924.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. By leading members of the Medical Profession throughout the world. Edited by Henry W. Cattell, A. M., M. D. Cloth. Pages 295 with illustrations. J. B. Lippincott Co. Philadelphia and London. 1924.

TWO LECTURES ON GASTRIC AND DUODENAL ULCER. A record of ten years' experience. By Sir Berkeley Moynihan. Pages 48 with illustrations. Bristol: John Wright & Sons Ltd. New York: William Wood & Co. London: Simpkin Marshall, Hamilton, Kent & Co. Ltd. 1923.

LIFE INSURANCE EXAMINATION. By Frank W. Foxworthy, Ph. B., M. D. Cloth. Pages 711 with illustrations. Price \$9.00. St. Louis: C. V. Mosby & Co. 1924.

MODERN METHODS OF TREATMENT. By Logan Clendening, M. D. Cloth. Pages 669 with illustrations. Price \$9.00. St. Louis: C. V. Mosby & Co. 1924.

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. Third Series. Vol. XLV. Cloth. Pages 840 with illustrations. Philadelphia. 1923.

"The specialist who operates upon the patient to clear up some foci of infection, as tonsils, gall-bladder, appendix, etc., should not fail to remember to return the patient to the general practitioner, for tonics and building-up process, correcting various states, warding off psychoses; otherwise the patient may wonder why one was not cured, when the operation was all one needed".—Medical Herald.

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CONTENTS

	Page		Page
The Diagnosis of Chronic Gallbladder Disease, J. E. Meyer, M. D.....	377	EDITORIALS—	
The Contributions of the Slit Lamp to Our Knowledge of Anatomy — The Diagnosis and Pathology of Ocular Disease, Robt. Von der Heydt, M. D.....	384	The Des Moines, Missouri Valley Meeting	410
Constipation in Children, E. R. Hays, M. D.	386	The Journal, The Reader, The Editor	410
An Outbreak of Botulism in Western Nebraska, A. L. Cooper, B. Sc., M. D.....	391	The Influence of Preventive Medicine Upon the Practice of Medicine.....	411
Roentgen Ray Treatment of Uterine Fibroids, R. W. Fouts, M. D.....	395	A Uniform Practice Act.....	412
Dementia Praecox, Marie L. Grote, M. D....	397	Acute Postoperative Dilatation of the Stomach	412
Cooperative Medicine from the Standpoint of the Patient, H. M. Hepperlen, M. D., F. A. C. S.....	399	Editorial Paragraphs	413
Preliminary Report On Experimental Nephritis Induced by the Use of Streptococci, Geo. W. Covey, A. M., M. D.....	402	A Representative of a Race of Medical Men—Dr. T. D. Thompson.....	414
Heredity, O. M. Moore, M. D.....	403	A New Chair at Jefferson Medical College	415
The Diagnostic Value of Pain Produced by Lesions of the Intracranial Structures, J. Jay Keegan, M. D.....	407	Alumni Reunion, University Medical College, Kansas City.....	415
Sporotrichosis — With Report of a Case, J. F. Gardiner.....	408	Red Cross Roll Call.....	415
		Elkhorn Valley and Fourth Councilor District Medical Societies Joint Meeting, Madison, Nebr., October 7, 1924.....	415
		The Societies	415
		Human Interest Tales.....	415
		Neurological	416

THE DIAGNOSIS OF CHRONIC GALLBLADDER DISEASE*

J. E. Meyer, M. D., Columbus, Nebr.

In this discussion no attempt will be made to draw a clinical picture of each of the various chronic affections of the gallbladder, nor will the clinical differentiation of cholecystitis with stones and cholecystitis without stones be emphasized. The complications and sequelae of cholelithiasis and cholecystitis, malignancy, and abnormalities of the biliary passages produced by pathologic processes in adjacent viscera will be touched upon only as they intrude themselves upon the picture of uncomplicated gallbladder disease.

History, physical examination and routine laboratory tests are of value in the relative order named and will usually suffice to make

a diagnosis. The positive findings elicited by these methods will be discussed first and then special methods applicable to the diagnosis of cases of suspected gallbladder disease will be given brief consideration.

History: The past history is of more interest from the standpoint of etiology than of diagnosis. Facts worthy of note are previous infections, long standing constipation and, in women, pregnancy.

The commonest complaint of the victim of gallbladder disease is "indigestion". The duration of its existence is from a period of days to thirty or forty years. Little aid to diagnosis is gained when this symptom is accepted at its face value, but its analysis will often give strong presumptive evidence in favor of or against the presence of gallbladder

*Read before the annual meeting of the Nebraska State Medical Assn., Omaha, May 13-15, 1924.

der disease. The typical indigestion will be found to consist of: First—A sense of fullness after the taking of food and especially some particular article of diet, such as meat, greasy foods, eggs or cheese. Second—A feeling of weight in the epigastrium after eating. Third—Heartburn. Fourth—Water brash. Fifth—Nausea. Sixth—Eructation. Any or all of these manifestations of "indigestion" may be absent, but as a rule some of them are present either constantly or from time to time. Frequently the patient is entirely free of indigestion for a period of weeks but, when digestive symptoms are noted at all, their total absence for a period of months or years as is often observed in duodenal ulcer, is seldom seen. A sense of fulness and a feeling of weight are the most constant of the foregoing manifestations of indigestion. The neurotic is likely to interpret his distress in these terms also, but will more often say that he "feels a lump in the pit of his stomach". A word of caution is necessary, too, in regard to eructation. This symptom is common but so often present in other affections, especially the non-organic that, alone, it has little significance; when it is accompanied by a bitter taste and is followed by relief of epigastric distress it is more suggestive. Marked anorexia occurs but is less likely to be the complaint than self inflicted restriction because of the unpleasant consequences that experience has taught the patient will result from partaking of a full meal. Flatulent constipation is frequently present. Diarrhea is uncommon except following relief of duct obstruction when, presumably, the release of bile often converts an obstinate constipation into a diarrhea with frequent, bright colored, liquid stools. Vomiting is rather unusual except during an attack of colic or an acute exacerbation of digestive symptoms. Digestive flareups are likely to be of several days duration and if they are accompanied by headache and vertigo, with little or no abdominal pain, are relieved by a mercurial and saline purge, and are recurrent, they will be interpreted by the patient as biliousness. Many bilious attacks attributed to "torpid liver" or auto-intoxication are due to gallbladder disease and hence when a history of biliousness is obtained, the gallbladder should be investigated. The digestive symptoms of gallbladder disease are often described as vague. "Unpleasant" would be a more descriptive term and would convey the idea that they are not alarming, as is cer-

tainly evidenced by the fact that they are often tolerated throughout a lifetime as the alternative to operative cure.

Pain varies from a slight discomfort, which the patient may recall as having been present for months or years, to the agonizing pain incident to the passage of a calculus. The interval type is located in the epigastrium as a rule, less often in the right hypochondrium and occasionally beneath the right shoulder blade. It is sometimes described by the patient as a soreness beneath the right rib margin. If referred, it is vaguely so towards the back and the patient has difficulty stating whether it is referred straight through or around the right side. This pain is not relieved by the taking of alkalis, though a co-existent heartburn may be. The typical gnawing hunger pain of duodenal ulcer which demands food or alkali for its relief is exceedingly rare. The pain of gallbladder disease differs from that of chronic appendicitis in that it is quite constantly located above the level of the umbilicus while that of appendicitis is almost as constantly below the level of the umbilicus or in the umbilical region. Gallbladder disease is probably the most common, and appendicitis a very rare cause of epigastric pain. The pain of gallbladder disease is less likely to be directly associated with increased exercise than is that of appendicitis.

Biliary colic is so distinctive and the familiar clinical picture so constant that its description will be omitted. If the diagnosis is not made during the attack several points are of value when the attack is subsiding or has just subsided, viz: The presence of slight jaundice, generalized abdominal soreness with an area of increased tenderness in the right upper quadrant, hyperbilirubinemia, and the presence of bile in one or more of the separately voided specimens of urine. Biliary colic does not invariably speak for the presence of stones. So called attacks of acute indigestion will often upon investigation, prove to be either biliary colic, renal colic or angina pectoris, and are rarely the result of overeating unless there is an underlying factor, which may be either intra-abdominal or extra-abdominal, but is almost always organic. Jaundice: A history of jaundice is rarely given by the patient. When jaundice has been noted from time to time, especially if it has repeatedly appeared after an attack of acute abdominal pain, it is of positive aid to diagnosis. However, when jaundice has

been so marked as to have been noticed by the patient it was probably due either to some complication or not to gallbladder disease at all. A history of jaundice in the known presence of gallbladder pathology does not give proof of the existence of stones but does make the diagnosis of cholelithiasis more tenable.

Fever speaks for a complication, usually either empyema, cholangitis, or stone in the common duct.

Headache, especially if cyclic and without demonstrable local cause should suggest an investigation of the gallbladder.

Of the symptoms enumerated, the digestive group and pain are most often encountered. Periods of entire absence of symptoms, interrupted only by colic, characterize certain cases. More commonly, however, either digestive symptoms or pain or both are rather constantly present in some degree with exacerbation of digestive symptoms or colic recurring at intervals. Symptoms may persist without these variations and without apparent increase in intensity, or may gradually become more annoying over a period of years. Exacerbation of symptoms late in life may be due to the development of pancreatitis, hepatitis or malignancy; and it is not at all unlikely that in some instances long standing gallbladder disease has been entirely silent, and has only become manifest when one of the foregoing complications or duct infection has supervened.

Physical Examination: The picture of "fair, fat and forty" has long been linked with gallstones. This vivid description does fit a type often afflicted with gallstones or cholecystitis without stones but the absence of all of these attributes certainly does not preclude a diagnosis of gallbladder disease. There can be no question of the greater incidence in the female than in the male. The obese appear rather more prone to be affected than the thin. As for the age incidence, there is no doubt that many cases fail of diagnosis because gallbladder disease is regarded as rare under forty. A majority of operatively confirmed cases are past forty years of age, and often distinctive symptoms date back only a few months or a year, but the early digestive symptoms are not so likely to be distinctive and minor digestive complaints, quickly forgotten by the patient, are not mentioned when the history is recited. It would seem safe to say that gallbladder disease is rare under twenty and that

after twenty-five it is more likely to occur early in women than in men. Pregnancy is probably the greatest single factor in determining this earlier incidence (after twenty-five) as well as the total greater morbidity in the female than in the male.

Repeated careful examination of the sclerae and the mucous membranes will very often reveal a mild grade of jaundice. Even when the sclerae are not definitely icteric they usually show a rather characteristic muddiness. The skin, too, although not often definitely icteric, usually lacks its normal clearness. Abdominal examination reveals visible fullness only with hydrops or empyema and then not constantly. Typical tenderness is found just below the costal margin in the parasternal line, but may be located in any part of the right upper quadrant. Tenderness below the level of the umbilicus is not often due to gallbladder disease and if unaccompanied by tenderness in the right upper quadrant is very rarely due to gallbladder disease. Rigidity is not often marked but somewhat increased resistance of the right upper rectus is a common finding. The gallbladder is rarely palpable except in empyema, hydrops, malignancy and when distended as the result of pressure upon the common duct from without. Only definitely distended, malignant, and some previously surgically drained adherent gallbladders can be outlined by percussion.

Hypotension is a common finding in gallbladder disease but has no diagnostic import.

Routine urine, blood count and blood Wassermann are of inestimable negative value. The positive finding of most value is the presence of bile in one or more specimens of urine following suspected biliary colic. A relative lymphocytosis has been reported but a slight leukocytosis is probably as common and a normal leukocyte count is compatible.

Methods of examination applicable to cases of suspected gallbladder disease: Feces; acholic stools are seen in extreme degrees of obstructive jaundice, and, therefore, speak for such conditions as catarrhal jaundice, carcinoma of the head of the pancreas, or stone in the common duct. The presence of occult blood in the stool does not help to differentiate between duodenal ulcer and gallbladder disease, but its constant absence does speak against duodenal ulcer. The finding of gross blood as tarry stools is against gallbladder disease and in favor of duodenal

ulcer. Fasting Gastric Contents: The finding of an appreciable amount of bile in the fasting gastric contents is suggestive of gallbladder disease. Achlorhydria, when disease of the stomach can be eliminated, is somewhat suggestive of gallbladder disease and probably more so of stone than of cholecystitis without stone. Gastric Analysis after Test Meal: Either hyperacidity or hypoacidity, in the absence of gastric disease, indicates reflex disturbance of extra gastric origin, and since gallbladder disease is the most common cause of reflex disturbance of gastric function, it should receive due consideration, when evidence of such dysfunction exists. Occult blood in the gastric contents recovered by the Rehfuß or Lyon tube is such a constant finding that it has no diagnostic value. The presence of gross blood in the aspirated gastric contents or vomitus is usually due to some organic disease of the stomach but occasionally blood streaked mucus is present in the vomitus during an acute exacerbation of symptoms in gallbladder disease.

Duodenal Intubation: Many accurate descriptions of the Lyon method of duodenal intubation are to be found in the literature. A constant technic should be followed carefully, and when technical errors occur in the performance of drainage, the results are usually vitiated, and would best be discarded. The interpretation of any finding obtained by non-surgical biliary drainage is subject to wide variation, dependent in a large measure upon one's belief in the principles involved. The findings outlined below have proved of value in our own work, and, except where otherwise noted, all have been checked at the operating table. In some instances our pre-operative assumptions have not been correct, but usually because of failure to take cognizance of positive drainage findings. 1. Very dark "B" bile is indicative of biliary stasis, and the extremely dark or inky black "B" bile usually indicates a definitely diseased gallbladder. 2. The absence of "B" bile is suggestive, but by no means conclusive evidence, of cystic duct obstruction. The value of this finding is increased when the presence of the bulb in the duodenum is confirmed by the fluoroscope. 3. The finding of a single type of organism in large numbers, i. e. a pure or nearly pure culture, is indicative of infection of the biliary tract. If the organism found is a streptococcus, the value of the finding is enhanced. By the nature of the procedure contaminations are

rendered likely and hence mixed infections should be looked upon with suspicion. 4. The entire absence of bile is indicative of common duct obstruction. In cases of common duct obstruction the examination of the duodenal contents for enzymic concentration following the administration of cream, a method introduced by McClure⁽¹⁾⁽²⁾, is often a valuable aid in determining the cause of the obstruction. 5. A great excess of cholesterol or calcium bilirubin crystals is suggestive of stones. We have not found distinct sand in any case. 6. An excess of pus cells either in clumps or evenly distributed in the bile is indicative of inflammatory disease of the bile passages. This finding is usually associated with increase in the number of epithelial cells but we have been unable to constantly determine the origin of the bile by cytologic study. Comparison of the various samples of bile with the gastric and duodenal contents may be of assistance in evaluating the cytology of the bile. 7. A very small amount of "B" bile is indicative of a shrunken gallbladder or a partially obstructed cystic duct. 8. The recovery of gross blood is reported as suggestive of carcinoma of the bile passages. 9. There are certain clinical observations that may be made in conjunction with drainage that seem to have diagnostic significance. Improvement of symptoms following gallbladder drainage has been attributed by several writers to suggestion, and the possible effect of suggestion cannot be denied; others believe the improvement to be due to the magnesium sulphate purgation and again it must be admitted that patients suffering from gallbladder disease will often say that they feel better after taking a dose of Epsom salts; but cases may be cited where the factor of suggestion can be rather definitely eliminated and where improvement occurs in the absence of purgation. However, we have paid little attention to improvement in symptoms from the standpoint of diagnosis, but we do consider either improvement in physical signs or aggravation of symptoms worthy of note. Examination of the abdomen immediately after drainage will often reveal absence of right upper rectus resistance which existed prior to drainage and a decided lessening of tenderness is the rule, with occasionally almost complete disappearance of very definitely localized tenderness. The day after drainage the entire abdomen is likely to be slightly sore but four or five days later there is usually a decided sub-

sidence of physical signs. In several instances when the presence of stones was in doubt, drainage was followed in from six to eighteen hours by severe colicky pain in the right upper quadrant, radiating to the right shoulder blade, and in each instance at operation, stones were found in the gallbladder with one or more stones in the cystic duct. Naturally these observations are subject to the limitations of all therapeutic tests. If the theory of the emptying of the gallbladder through the cystic duct as the result of a stimulus applied to the duodenal mucosa is ever definitely proven to be false most of the foregoing deductions will be shown to be absolutely groundless, but the repeated absence of any bile, the culture of a single type of organism and the artificial production of biliary colic will continue to have significance.

Roentgenologic examination may yield direct or indirect evidence. The presence of shadows of calculi upon the roentgenogram is the most definite confirmatory evidence of the existence of gallbladder disease, and improvements in technic are making the percentage of positive findings greater. A gallbladder plainly visible upon the roentgenogram is usually diseased. Indirect evidence consists of signs obtained in the upper gastro-intestinal tract following the ingestion of a barium meal, and may be: 1.—Deformity due to pressure of a distended gallbladder. 2.—Deformity due to adhesions, which are not always indicative of a diseased gallbladder. 3.—Reflex signs such as hyper-peristalsis. The method devised by Graham and Cole⁽³⁾ of serial roentgenograms and fluoroscopic examination following the intravenous injection of tetrabromphenolphthalein gives hope of greater accuracy in the roentgen ray diagnosis of gallbladder disease. This technic would appear to have a definite application in selected cases but its final evaluation should await operative corroboration of the roentgen ray diagnosis in a large group of cases.

The Van den Bergh test is of value in differentiating obstructive and non-obstructive jaundice.

Other tests upon the blood serum for hyperbilirubinemia may be of value in detecting latent jaundice. Friedman⁽⁴⁾ asserts that Fouchet's Reagent will react positively in cases of latent jaundice and will not react with the quantity of bilirubin in normal serum. We are now trying out this reagent in those cases of chronic gallbladder disease,

showing characteristic muddiness of the sclerae and skin, but who do not show bile in the urine by ordinary chemical tests.

Case 1. The patient was a married woman, aged 30 and weighed 210 pounds. Three pregnancies had been uneventful. She had had two attacks of right sided abdominal pain with a six months' interval of apparently good health. The first attack lasted several days and the second two hours. Our examination was made four days after the second attack, and revealed very definite tenderness and muscle spasm over McBurney's point and somewhat less tenderness and muscle resistance over the gallbladder area. Roentgenograms were negative. (Cases have been chosen in which roentgen ray findings were negative, since when the roentgen ray confirms the clinical diagnosis further studies are unnecessary.) Gallbladder drainage yielded moderately dark brown "B" bile containing a few flakes of mucus, microscopically many cholesterol crystals, diplococci, cocci in chains and an excessive number of pus cells. Culture yielded a streptococcus. Examination immediately after drainage showed entire absence of upper abdominal rigidity with only slight tenderness persisting. The lower right quadrant tenderness and rigidity were apparently increased. At operation, the appendix was found to be adherent, kinked and sub-acutely inflamed. The gallbladder was whitish, thickened and contained a large number of faceted cholesterol stones. The bile contained in the gallbladder closely resembled that obtained at drainage. In this case physical examination pointed the way and drainage confirmed the diagnosis of gallbladder disease in the presence of appendicitis which did not account for the upper abdominal signs. This case is not unusual except that in our experience the finding of streptococci in bile obtained by drainage has not been a common one, nor do we believe that associated gallbladder disease and appendicitis should be considered the most common cause of tenderness in both the upper and lower right abdomen.

Case 2. The patient was a woman aged 30 and weighed 175 pounds. She had one child. She was first seen after an apparently typical attack of biliary colic. The attack had started twelve hours before she was brought to the hospital and during this interval she had been under the observation of her physician. Upon admission she seemed almost entirely free of pain. There was generalized abdominal tenderness of moderate degree. The leukocyte count was 16000 and the temperature 100°. The following day one specimen of urine was strongly positive for bile and two others moderately positive. Gallbladder drainage yielded only a small amount of "B" bile delivered at intervals. Ordinary roentgenograms were negative and of those taken following the administration of tetrabromphenolphthalein, the twelve hour film showed a barely perceptible shadow of the gallbladder and later films only a slightly more intense shadow. At operation the gallbladder was found to be thickened and distended and it could not be emptied by pressure. Upon investigation the failure to empty was found to be due to obstruction of the cystic duct by a dense adhesion, the division of which allowed the gallbladder to empty readily. No stones were found in the gallbladder or ducts. This case is interesting as an instance of non-calculous biliary colic. The

diagnosis might have been aided by the roentgenograms following tetrabromphenolphthalein; however, we disregarded the lack of corroborative laboratory and roentgen ray evidence and made a diagnosis based upon the clinical manifestations, of cholelithiasis, which proved to be incorrect.

Case 3. The patient was a married woman 31 years of age who weighed 130 pounds. She had two children. She dated her complaints of malaise, vertigo and pain in the right side, back to an attack of influenza five years before she came under our observation. She responded affirmatively to the suggestion of almost any symptom. Several abdominal and one rectal operation had failed to afford her relief. She was improved for six weeks following a surgical drainage of the gallbladder. The patient stated that "through a mistake the gallbladder had not been removed and she was sure she could not be well until it was out". Physical examination was essentially negative except for a sharply defined area of hyperaesthesia in the right upper quadrant. Excepting a leukocyte count of 13,000 all laboratory studies proved negative. In spite of our efforts at suggestion, the area of hyperaesthesia was not affected by biliary drainage and her symptoms remained the same. Proof of the presence or absence of gallbladder disease in this case is lacking as we could not see fit to gratify the patient's desire to have her abdomen opened again. We believe, however, that this patient was a gallbladder hypochondriac, a type likely to become greater in number because of increased attention being paid nowadays to "masked types of gallbladder infection".

Case 4. The patient was a married woman aged 49, who stated her complaints to be "heart trouble", pain in the pit of her stomach and under her right ribs. She had had occasional acute exacerbations of pain and digestive symptoms which were always followed by headache. Physical examination revealed no abnormality of the heart, rather marked tenderness in the right upper quadrant with slight rigidity. Roentgenograms were negative. Fasting gastric contents contained gross bile, and titration showed free acid twenty and total thirty-four. Gallbladder drainage yielded 120 cc. inky black "B" bile. Immediately following drainage tenderness had practically disappeared. Eight hours later she had typical gallbladder colic with pain radiating to the right shoulder blade. Four days later colic had subsided and the patient was free of the annoying symptoms that existed prior to drainage. At operation two stones measuring about 0.6 cm. in diameter were found in the gallbladder and another about the same size in the cystic duct. The gallbladder contained inky black bile. I do not believe that drainage caused the stone to move from the gallbladder to the cystic duct, since drainage of the cushioning bile from the duct would, in all likelihood, be sufficient to account for the colic.

Case 5. The patient was a man aged 58 who weighed 240 pounds. He was brought to the hospital in coma. He had suffered with what he called "inflammatory rheumatism" from the age of 22 until he was 45, and then enjoyed good health until a year prior to the onset of his present illness, when he had an attack of epigastric pain followed by severe jaundice and extreme malaise lasting a week. Then

he remained well until two months later when he was awakened in the middle of the night by another attack of severe epigastric pain. This was followed by marked malaise but no jaundice. He was then free of all symptoms until two days prior to admission to the hospital when he was awakened at four o'clock in the morning by a severe pain about the umbilicus, quickly radiating to the left hypochondrium and then to the right hypochondrium. He was given morphia for the relief of pain by his family physician. He gradually lapsed into a state of stupor. When admitted to the hospital he could not be roused, his temperature was 99.0°, pulse was very weak and irregular, rate about 124, respirations 28, systolic blood pressure 80; he had not voided for about eighteen hours and no urine was found in the bladder upon catheterization; the abdomen was greatly distended. The patient responded to the administration of fluids, intravenously, subcutaneously and rectally. Jaundice developed the following day, when the urine showed the presence of bile, albumin, innumerable hyalin and granular casts and occult blood. Improvement in his general condition was steady, but he revealed a marked degree of nephritis with hypertension (systolic blood pressure from 170 to 180, diastolic 80) Wassermann reaction was negative. After a prolonged period of rest and dietary restriction, a laparotomy was done under nitrous oxide oxygen anaesthesia. The pre-operative diagnosis was stone in the common duct, chronic glomerulonephritis. Operation revealed a carcinoma of the gallbladder, invading the liver to a depth of about 3.0 cm. A very hard enlarged lymph gland lay alongside the common duct just beyond the junction of the cystic and hepatic ducts. No stones were palpated in the gallbladder or ducts. In this case our attention was focused upon the nephritis and the possibility of the process in the bile passages being something other than stone in the common duct received too little consideration. Gallbladder drainage was contemplated at one time but several nocturnal attacks of fleeting epigastric pain made us feel that this might be a dangerous procedure. Since the gallbladder and ducts were not opened, it cannot be positively asserted that no stones were present but it seems reasonably safe to assume that this patient's symptoms were chiefly due to the pressure of the enlarged gland upon the bile ducts, plus the nephritis.

SUMMARY

1. In a majority of instances the diagnosis of chronic gallbladder disease can be made by a carefully taken history, physical examination and routine laboratory tests.

2. In atypical cases, special methods, as indicated in the case to be studied, are of definite aid.

3. Patients most likely to give positive evidence upon study are those presenting themselves with the complaints of epigastric pain and long standing digestive symptoms.

4. Gallbladder disease occurs frequently before the onset of the fifth decade and is quite common in women between 25 and 40 years of age.

5. Of the newer methods advanced as aids

*This and all other operations reported were performed by Dr. M. C. James.

to the diagnosis of gallbladder disease non-surgical drainage, roentgen ray following the administration of tetrabromphenolphthalein and tests upon the blood serum for latent jaundice give most promise for the future.

6. A number of methods reported to have diagnostic significance in gallbladder disease have not been discussed either because the methods have proven to be of uncertain value or because of lack of personal experience with them on the part of the writer. Such methods are the quantitative estimation of the cholesterol content of the blood serum, icterus index and anthropometric deductions.

BIBLIOGRAPHY

1. McClure, C. W., and Wetmore, A. S.: Studies in Pancreatic Function, Boston M. & S. J. 197:882, 1922.
2. McClure, C. W.: Observations on the Diagnosis of Gallstones, Med. Clin. of N. Am. 7:733, 1923.
3. Graham, E. A., and Cole, W. H.: Roentgenologic Examination of the Gallbladder, J. A. M. A. 82:613, 1924.
4. Friedman J. C.: Latent Jaundice, Med. Clin. of N. Am. 7:397, 1923.

DISCUSSION

B. B. Davis, M. D., Omaha, Nebr.: I have been very much interested in this paper. The essayist has gone into detail very well. There are a lot of good points that have been made. The only thing I want to speak of particularly in the discussion is with reference, not to the obvious cases — we can all diagnose those — the cases where we have had jaundice in connection with hepatic colic. They almost diagnose themselves. The patients can diagnose them as "gallbladder trouble." But we have a large number of cases that come to us with a history of a long period with "dyspepsia," as they call it, and oftentimes they have been treated for gastric trouble. In my own experience, I have seen a great many cases treated for gastric or duodenal ulcers, when in reality we find the gallbladder is really at fault.

We have all talked a good many times in regard to the apparent ease with which we can make a differential diagnosis between a gastric lesion and an extra-gastric lesion. That is not always so easy. We find once in a while a number of cases that have run the gauntlet of a number of good doctors with what is supposed to be a gastric ulcer, when the gallbladder is really at fault. I think the reflex effect the gallbladder has on the stomach should be considered. We have a spasm of the pylorus in many cases which may produce gastric symptoms which are interpreted as due to stomach pathology, when the trouble is entirely away from the stomach.

In making a diagnosis of these chronic cases with no acute attacks of colic and that have never been jaundiced, my idea is the first and foremost thing, and one of the most important, is getting a good, careful history. I feel as if a little time spent in getting the history is of inestimable value, not only in this particular case, but in a great many other cases.

Some time ago a couple of surgeons in Illinois who were practicing together — men of same age and ability — started out with the idea they would alternate the cases. "A" would take a history of this case and make a tentative diagnosis. "B" would examine the case physically without going into its history, and make his diagnosis. The next case would be alternated, "A" making the physical examination, and "B" taking the history. It was found the cases where the diagnosis was made from the history were far more nearly correct than the diagnosis made from physical examinations. That is not only in gallbladder cases, but in a great many other things. I say this to emphasize the matter of careful history taking.

With reference to the use of the x-ray, I use it in a good many cases — not all of them, but probably 66 2-3 per cent of the gallbladder cases I operate on. I view the gastro-intestinal x-ray as being more a matter of negative evidence to rule out the stomach, than from anything you get directly from the gallbladder. Occasionally we get some shadows of stone, but it is in such a small percentage of the cases it is not really of great benefit to us.

The Lyon-Meltzer treatment I look upon as about as futile as anything that has been tried. It seems to me it has been pretty definitely shown to be fraught with error in the conclusions and we should not rely very much upon it. For instance, you can get "B" bile just as readily in most cases where the gallbladder has been removed as when it is unremoved. In the second place, we find on examination more than 60 per cent of these cases where we have a distinct cholecystitis or stone, or both, we have a perfectly sterile bile in the gallbladder. Third, the bacterial test in the Lyon-Meltzer treatment is not positive. As far as the treatment is concerned, I feel the same about that. Granted that it drains the gallbladder, in a great majority of the cases this is absolutely futile, because the infection is in the wall of the gallbladder and not in the mucous membrane, which is involved in a comparatively small percentage of the cases; whereas the wall is involved in nearly all when we have definite cholecystitis.

Dr. Meyer, closing: I appreciate the remarks Dr. Davis has made.

I want to emphasize the fact that for positive evidence the history is preeminent and that all the routine methods, even physical examination, are chiefly of value from the negative standpoint.

As far as the Lyon-Meltzer method is concerned the results are of value when positive evidence is obtained and not in every case in which it is used. The two most important findings are: The presence of a streptococcus and the repeated entire absence of bile. The presence of "B" bile after cholecystectomy is not a valid argument against the rationale of drainage since it has been shown that nature passes the functions of the gallbladder to the cystic duct after cholecystectomy. Some interesting work has been done recently by Dr. Sweet of the University of Pennsylvania on the anatomy and function of the gallbladder. He concludes from his studies of the anatomy of the gallbladder that it is very difficult for the gallbladder to empty and he doubts whether bile leaves the gallbladder through the cystic duct "under normal conditions". Dr. Sweet states that not only the

kink in the cystic duct but the commonly overlooked valves of Heister are mechanically designed to facilitate filling and to retard emptying. However, I think that since it is possible to empty the normal gallbladder by pressure upon its walls it is justifiable to believe that it can be emptied by some normal intra-abdominal means.

We have had some interesting cases illustrating the value of x-ray following intravenous injections of tetrabromphenolphthalein. There is one thing this method does — it serves to localize the gallbladder. In a recent case the roentgenologist reported that a shadow at the brim of the pelvis might be due to a low-lying gallbladder full of stones.

X-ray following tetrabromphenolphthalein showed a normal shadow of the gallbladder under the costal margin, filling and emptying within the normal time limits. This method is not entirely comparable to x-ray following the ingestion of a barium meal, because the dye must go through the liver and hence the intensity of the shadow would be influenced by the liver function, and, too, it is conceivable that a shadow might be produced in spite of duct obstruction as the result of a portion of the dye being carried to the gallbladder by the lymphatics. As a means of differentiating between gallbladder and right kidney shadows this method has very obvious advantages over pyelography.

THE CONTRIBUTIONS OF THE SLIT LAMP TO OUR KNOWLEDGE OF ANATOMY — THE DIAGNOSIS AND PATHOLOGY OF OCULAR DISEASE*

Robt. Von der Heydt, M. D., Chicago.

The introduction of the slitlamp by Alvar Gullstrand has opened an entirely new field for diagnosis and clinical observation to ophthalmology. The literature has been enriched by hundreds of reports by more than a score of investigators in this new line of research.

In order to present a few of the interesting new observations, we will begin with the limbus, cornea, aqueous, iris, lens and lastly describe the vitreous.

THE LIMBUS

At the limbus we see the vascular loops. In the circulation within these I recently witnessed an interesting phenomenon. I was transilluminating a small vessel loop. I could see the individual red cells as they rolled along. I noticed the flow in a certain direction, all of a sudden it stopped, then swerved back and forth, then it turned into a reverse direction, and this phenomenon repeated itself at short intervals. I was evidently witnessing a change in the balance between arterial pressure and negative venous suction.

In many cases of suspected fresh trachoma we cannot make a certain diagnosis until we see a definite characteristic corneal participation. With the slitlamp we may discover the very incipience of pannus formation manifested by a short extension of the upper vascular loops. This enables a certain diagnosis many times at a period weeks before it would otherwise be possible.

A diagonal passage of the light bundle through the cornea, allows of a definite de-

termination of the depth of opacities, nerve-fibers and newly formed vessels within the stroma. By a similar diagonal cross-cut luminous section we may determine depth within the lens.

THE CORNEA

Corneal nerve-fibers are dichotomously branched and at times show a medullation for a short distance inward from the limbus.

Old scars of the cornea are seen to have a tendency to become circumscribed and circular, and even though the loss of substance was superficial an anterior apposition of clear cornea is noted. Every spot where at one time a very small foreign body had been removed is evidenced by the permanent presence of a faint definite circular subepithelial halo.

Physiological and pathological dewlike infiltrations of the corneal epithelium and endothelium are common findings seen by transillumination.

The physiological infiltration is seen at the limbus and represents a saturation of the superficial cornea by nutrient fluids.

Pathological dewlike infiltration is seen in glaucoma, iridocyclitis, and in keratitis and ulceration. It is seen to persist for years after the healing of a corneal ulceration in a circumscribed zone surrounding the lesion.

Hirschberg vessels, a permanent evidence of a former interstitial keratitis, were thought to be connective tissue remnants. The slitlamp discloses these deep vessels to be permanent carriers of blood, at times the smaller ones in a state of passivity of function. I have seen them carry blood and

*Lantern slide lecture presented at the session of the Sioux Valley Eye and Ear Academy, Omaha, Nebraska, June 30, 1924.

plasma 45 years after quiescence of the process. I have cut them in cataract extraction and a few weeks thereafter they again were in function. This proves that these vessels have become a physiological necessity for this pathologically altered cornea. Similar deep vessels are also found after all eye diseases where there has been a long continued ciliary hyperemia.

Wrinkling of Descemet's membrane is a common clinical finding. The wrinkles are coarse and an evidence of hypotonia. They are found complicating iridocyclitis, corneal ulceration and after ocular perforation by trauma or operations.

In uveitis, we see a varied flora of leucocytes, red blood cells, pigment cells, pigment granules, amorphous cellular debris, mutton tallow spots and exudative masses on the posterior corneal surface, in various stages of recent deposition and absorption.

THE AQUEOUS

We see the aqueous as an optically empty space. In pathology we see leucocytes and other cellular elements in circulation or in more or less rigid suspension. These cells when in motion plainly demonstrate the normal current of the aqueous within the anterior chamber. They rise in the posterior zone near the warm iris and are precipitated anteriorly in back of the colder cornea.

Depigmentation within the anterior chamber is seen as a definite senile change. Scattered pigment is also seen after trauma and operations. In iridocyclitis exudate masses, when impregnated with pigment, cause the latter to proliferate as if richly fertilized. I have seen large exudative masses on the anterior capsule covered in 12 hours by a carpet of chocolate colored pigment. Isolated masses in the center of the pupil, and not at all in contact with iris pigments, are impregnated by pigment cells free within the aqueous.

Pupillary membrane remnants in the anterior chamber are a very common finding and present a great variety of structural peculiarities.

THE IRIS

The normal iris is an interesting structure. It varies greatly in design of stroma. We see beautiful criss-cross lattice work designs at varied depth and also balcony-like projections. Some irides, the dark brown especially, at times present a poverty of design, they resemble a rubber bath sponge.

The pupillary collar is beautiful to observe, especially in its active participation in the process of dilatation and contraction. Pigment is often absent over large areas, an evidence of trauma, more often senile depigmentation. A definite diagnosis of Argyll Robertson pupil may be made by alternately turning the light off and on while the iris is in focus.

THE LENS

For the past 30 years our knowledge of the anatomy of the lens has been at a standstill. By a study of the very incipience of cataract formation much that is new to us about the structure of the normal lens has been exposed. Cataract in its development, as you know, follows definite anatomic lines and thus emphasizes them. Out of this observation a new anatomy of the lens has developed. We see the various lamellae nuclear surfaces and segmentations and have learned to identify them by their configurations. We know that the lens continues to grow during life. New outer fibers are being constantly formed while central fibers become sclerosed, lose their nuclei and assume a stage of retarded or inert metabolism. This is presbyopia.

New types of cataract have been isolated and recognized. I have been able often to diagnose the presence of three and four definite and distinctive forms of cataract within one and the same lens. So-called senile cataract may be diagnosed as to whether it is quiescent or more progressive. In the type that threatens to progress, incipient spoke formation may be seen by the slit-lamp, when other methods of observation fail to disclose them. We have isolated new slowly progressive types of lens changes found in young adults and middle life. These are the various types of wreath-shaped, puntate, coronary, and blue-green cataracts.

THE VITREOUS

We can see the vitreous only to about half its depth. It has a beautiful lace curtain-like structure, at times like cirrus clouds and seems suspended in portier-like folds from above, and in layers at various depths.

The supporting structure is fixed. Exudates are strewn upon it and do not precipitate. They remain where placed and though they seem to be set into active movement on motion of the eyeball, and always return to their original site after the eye is fixed.

Back of the lens in almost all normal eyes one may see the hyaloid artery remnant as a white, usually movable, spiral. This is nature's physiological disposition of the hyaloid artery remnant.

All of these interesting findings I am sure are of great value to ophthalmic practice. But little added time is necessary in practicing this new method. With it one incidentally learns the art of accurate observation.

CONSTIPATION IN CHILDREN*

E. R. Hays, M. D., Falls City, Nebr.

It is not my intention in this paper to discuss in detail all the causes and effects of constipation in children, nor can I offer you a wonderful formula that will cure all cases and have the babies cry for it. It is my desire to go hastily over this important subject and call your attention to the wrong we do in thoughtlessly advising the use of cathartics or suppositories, thereby adding to the greatest problem of childhood, constipation.

In my experience in dealing with children, the symptom most often related is, "My baby is terribly constipated and his bowels will not move unless I give something each night, and then often an enema or suppository." It is obvious that this condition seen so often in early life is not conducive to the growth and development of the strongest, and I believe that if we, as medical men, use more thought as to diet and less to physic, more wisdom in our advice, and fewer enemas, we will do our part in preventing rather than causing constipation.

To recognize constipation one must be familiar with the normal number and consistency of the intestinal discharges in the various periods of early life, for constipation is a condition in which the number of stools passed is less than normal or in which the consistency is greater than normal.

During the first year of life, the normal daily number of evacuations is two to three in the breast fed and one to three in the artificially fed. The consistency is normally greater in the artificially fed but should not be so great as to cause discomfort on passage.

In the second year the normal number of passages daily is one to two and in later childhood one is the usual number.

Constipation being a symptom and not a disease, its diagnosis, of course, is already made. However, the all important thing is the diagnosis and the recognition of the cause of the condition and this depends upon a thorough knowledge of the various possible etiological factors and demands a careful history which should include every detail concerning the child's diet, habits and daily life; a thorough physical examination which should include a rectal examination in every case and an x-ray examination where

the cause cannot be immediately found otherwise.

It is difficult to make a satisfactory classification of the various kinds of constipation and the various etiological factors involved, however, I have formed the following from several authorities and while not consistent in every respect, I think it covers the subject fairly well.

- | | |
|-----------------------------------|--|
| 1. Constitutional, | { Heredity.
Thyroid insufficiency.
Backward development. |
| 2. Mechanical, | { Long colon.
Intestinal lesion.
Obstruction from pressure. |
| 3. Reflex (spasmodic) | { Fissure of Anus.
Hemorrhoids. |
| 4. Partial paralysis, | { Opium.
Acute Infectious Diseases. |
| 5. Dietary, | { Too weak food.
Too little fat.
Excess of fat.
Heating of milk.
Too little solids. |
| 6. Muscular Weakness,
(Atonic) | { Prolonged Indigestion.
Malnutrition.
Rachitis.
Lack of exercise.
Abuse of Laxatives.
Lack of proper training. |

There are so many instances in which the mother and child are habitually constipated without apparent cause that it is probable that heredity plays some part. Nevertheless, the possibility of coincidence should not be overlooked and the cause should be sought further.

Thyroid insufficiency is a possibility, which must not be forgotten in infancy. In marked cretinism the cause of the constipation would not be overlooked, but in many cases the characteristic stigmata are slight. The backward development of digestive glands, liver and intestinal glands may be a

*Read before the Annual meeting of the Nebraska State Medical Association, Omaha, May 13-15, 1924.

contributing cause of constipation in young infants. So under the constitutional class, with the exception of thyroid insufficiency, the cause cannot be recognized or removed, which in the case of heredity is permanent and in the case of backward development temporary. The treatment of constipation from thyroid insufficiency is that of cretinism.

Under mechanical causes we have long colon, especially the sigmoid flexor which we know is relatively longer in infancy than later life and has a proportionately longer mesentery. This allows more opportunity for kinks and bends and may be a contributing cause to constipation in infancy.

Congenital lesions may also exist, such as partial stenosis, a Jackson's membrane or some peritoneal adhesion. Hirschsprung's disease and tumors are likewise mechanical causes and may be recognized by physical examination; but stenosis bends and kinks depend on x-ray pictures taken after bismuth meals and injections.

Reflex causes, producing the so-called spasmodic form of constipation and seen in conditions such as anal fissure and hemorrhoids, are recognized by objective examinations.

Under partial paralysis we have those cases coming not from weakness but from impaired innervation. This is the probable explanation of the symptomatic constipation seen in acute infectious diseases. This same sort of constipation (partial paralysis) is seen as the result of the administration of opium, usually in the form of paregoric or soothing syrup. In acute infectious disease the constipation is temporary, being relieved as the disease subsides. In opium giving, the treatment is, don't give opium.

The first four heads of the classification I have just described—viz. constitutional, mechanical, reflex and partial paralysis, I term possible causes, but the probable cause of constipation by far oftener comes under one of the two following, dietetic and muscular weakness.

In infants the commonest dietary cause is insufficient food. The milk may be insufficient in quantity or too weak in quality. Knowing the quantity required for a given age, it is an easy matter to determine how much the baby is taking by weighing before and after each feeding. As to the quality of

breast milk, I want to say that so seldom in this country is mother's milk of insufficient quality that we should presume, until definitely proven otherwise, that all breast milk is good milk.

Right here I want to call your attention to a common cause of insufficient food in the breast fed, with the resulting constipation and failure to gain weight, and that is the practice of giving too much water. Nursing infants require but little water outside of that contained in mother's milk. I never advise more than half an ounce twice a day and many times in special cases give none for a period of weeks.

The capacity of the baby's stomach at one month of age is about three ounces. The food requirement is forty to fifty calories per pound per day. In other words, the younger the child the smaller the capacity and the greater the requirement, and if this small space is occupied with water there is not sufficient room for the food needed. We know from observation that a nursing calf or colt or pig seldom drinks water, but we fail to apply this knowledge to the human animal.

In weak foods the fat is insufficient, and as fat forms the principal bulk of feces in infants, and the carbohydrates and proteins being absorbed there is not sufficient fecal matter to produce a stool. Again, an excess of fat usually seen in the artificially fed, is a common cause of constipation. The stools are large, dry, gray in color, and are the characteristic soap stools, produced from an excess of fat.

An excess of starch in the diet may cause constipation but in this instance the symptom is due to muscular weakness from the effects of prolonged fermentation. In the second year of life too much milk is often a cause. Mothers believing milk is safer are reluctant about giving solid food. In the second year the taking of a quart of milk should be the limit for each twenty-four hours. In still older children another dietary fault is the giving of insufficient cereals, cooked fruit and vegetables. Cooked fruit is more laxative than raw, and a green vegetable is laxative in direct proportion to the fiber it contains. So then all dietary causes of constipation may be recognized by a careful and painstaking inquiry into every detail of the child's diet.

Under muscular weakness we have listed

those causes that are not primary, but secondary to a variety of conditions. This is the well known atonic form of constipation which is one of the commonest encountered in early life. A weakness of the muscles of the abdominal and intestinal wall is the problem.

Prolonged indigestion, especially when due to an excess of carbohydrates, is the commonest of these causes. While carbohydrate indigestion in infants produces loose movements from the irritating products of fermentation, the excessive gas formation and intestinal distention causes an atony of the intestinal muscles which later results in constipation.

Malnutrition and rickets involve the abdominal muscles in their general wasting and muscular atony and constipation is the result. Lack of exercise and postural deformities lead to muscular atony and pendulant abdomens and are likewise causes under this class. Proper training of the child to empty its bowels at a regular and proper time is often lacking and this leads to postponement and no action. Infants and older children can be taught to empty their bowels at a regular time each day, and never should they be allowed to wait until the spirit moves them. They should have a stated time each day to tend to this need and not to wait for the impulse.

Last but not least of our causes of constipation is the abuse of laxatives, enemas and suppositories. Why should a normal child, born of normal parents, being supplied with ideal mother's milk, be constipated? The answer is, it isn't. We start the baby on castor oil, milk of magnesia, enemas and suppositories but for what reason, I never knew. And nature simply adjusts itself to this extra stimulation and waits until the next dose is given. We teach the bowels to tolerate our medicines and to move only from an extra impulse and then we wonder why they will not act when we fail to give the stimulant we have taught them to expect. Likewise, enemas and glycerine suppositories. Enemas distend the bowel, weaken the musculature and ultimately produce atony. Glycerine being hygroscopic in its nature extracts the normal secretions from the tissues and is sure, if used in suppositories for any length of time, to produce a dry, weak, atonic non-acting lower bowel.

The prognosis of constipation depends on

the etiological factors involved. In some cases due to the easily removable cause such as improper diet, or the use of opium, the prognosis for immediate improvement is good. Such causes as insufficient exercise, lack of proper training and the abuse of laxatives are removable, but if they have resulted in the development of the atonic form of constipation, considerable time is often required before improvement is noted. In cases due to intestinal lesion the prognosis depends upon successful surgical removal of the cause.

The treatment of constipation depends upon the removal of the cause, proper diet and the establishment of a regular habit of evacuation. I am not going deeply into this phase of the subject, but wish to touch on a few points. Insufficient food in the breast fed can usually be successfully increased by expressing or stripping the breasts after each feeding. Every drop of milk should be removed from the breast if we are to hope for an ample and lasting supply.

In the artificially fed quantity is not a problem, and the composition should be made with a view of finding the combination of food elements best suited to the needs of the individual. Maltose-dextrine preparations are better than lactose in constipation and malt extracts are better than dry-dextra maltose. Oatmeal water as a diluent has laxative action where barley water has not. Orange juice so often given is not a laxative but stewed prune juice is, and may be given in the last half of the first year.

The diet of older children, as I have said before, should contain cereals, stewed fruits and green vegetables, but care should be taken not to produce indigestion by giving too much fruit and coarse food.

To establish the regular habit of evacuation in babies, they should be put in a properly constructed chair at a regular hour each day and a suppository made from a roll of paper dipped in olive oil or a glass rod well lubricated should be inserted to supply a local stimulation. As soon as the habit is established the suppository should be omitted or the child will be come dependent upon it.

Massage of abdomen is useful and should be given for five minutes just before the child goes to bed. The hand should not be oiled and the skin should not be rubbed, but the hand and abdominal wall should roll together over the deeper structures.

Laxative must be used when other means fail—but too often laxatives are given before other means have been tried. Castor oil, calomel, senna, compound licorice powder and rhubarb should not be given in chronic constipation of early life. All of them cause too violent a stimulation of peristalsis and are not adapted to prolonged use. Milk of magnesia for the very young, and cascara and phenalthaline for the older children are the best remedies to use in the chronic type, and they are best not given in a single large dose, but should be divided into three or four small doses to be taken through the day. As the condition is relieved the dose should be reduced. A high injection of olive oil at bed time for a period of weeks, together with nux t. i. d. will help to restore normal function.

I have no use for glycerine suppositories and s. s. enemas in the treatment of chronic constipation. I have seen more cases produced from glycerine suppositories than from any other one cause. A soap suppository may be used when an immediate passage is needed—or possibly a soap enema in acute disease—but I think the arming of a mother with a bottle of glycerine suppositories and a rectal syringe with the advice that she is to use one or the other whenever she thinks best, is not doing our part in the practice of preventive medicine.

In conclusion I want to say that I have within my practice seven children ranging in age from six months to two years that have never had a laxative, an enema or glycerine suppository, and to recapitulate, I believe that if we as medical men use more thought as to diet and less to physic, more wisdom in our advice and fewer enemas, we will do our part in preventing rather than causing constipation.

DISCUSSION

F. A. Wells, M. D., Axtell, Nebr.: There are many things to be commended in this paper, but it should not be taken as a guide in all cases. I will have to take issue with the Doctor on the matter of water. The condition of the stool should govern the amount of water more than any other one thing. We know water introduced by the mouth into the stomach is rapidly absorbed and does not stay to keep out other foods for any length of time.

There was not quite enough difference made in the paper differentiating between the breast-fed baby and the artificially fed baby. Of course some of us older physicians have been led to believe different things for a good many years as to what to do. Personally, I have never seen a case that was

constipated from too much fat in the food. I suppose it is possible. After we have been in practice twenty years, we do not say anything is not possible but it has been my experience.

Regulation of the mother's diet in the breast-fed baby and the regulation of the child's artificial diet in the artificially fed baby go a long way and are by far the most important part in the treatment of constipation in infants.

Another thing: The title of the paper was "Constipation in Infants." We generally think of an infant as being under a year old. I have never had success in training an infant under a year old in when to move its bowels. I have had a couple of my own, as well as treating others; so that I think the age should be mentioned in these different methods of treatment.

Floyd S. Clarke, M. D., Omaha, Nebraska: I think we should not let this most excellent paper go by without discussion. The Doctor has covered his subject very well, and one cannot take up anything of great amount of interest aside from the question of water. I do not believe he meant to convey the impression to us that babies should not receive water. I think it is one of the essentials and should be given the baby. The difficulty I have is in getting the mother to give the baby enough water.

There seems to be a general impression that all water given a baby should be boiled. In my opinion this is not necessary. If any of you have ever tasted boiled water you know how tasteless it is. Practically speaking, the only danger in giving unboiled water to a baby is the danger of typhoid. In those communities where the water is frequently tested for the typhoid germ or other pathogenic bacteria, the risk of giving unboiled water is practically nil.

I do not particularly like the idea of comparing our babies, in the giving of water, to calves and pigs, and a few of the rest of the animals. I question whether such comparison would meet the approval of most doctors, and certainly not the mothers.

The mother thinks it is absolutely necessary that baby's bowels move every day. I think most of us have the opinion it is not absolutely necessary. The baby might go even forty-eight or seventy-two hours without a bowel movement and still be absolutely normal. As the Doctor has outlined, most of these cases can be controlled by dietary regime and regulatory habits without the giving of castor oil or other cathartics.

H. B. Hamilton, M. D., Omaha Nebraska: One of the most pernicious habits that has come up in the medical profession is the unnecessary giving of laxatives. I believe if we would put the same thought on whether we would give a laxative as we do on the giving of a narcotic, we would come nearer good practice. It has been long the custom to give a dose of laxative merely as a matter of routine, instead of investigating whether there is a necessity for it.

In contagious diseases, I think constipation is frequently due to loss of water. The child has been vomiting and has had a high fever, and there is not sufficient water in the intestinal contents.

Another type of constipation which I see commonly is the type due to too high a fat, or relatively too high a fat. One baby may be able to digest a cer-

tain amount, and another has a constitutional inability to digest the same amount, and he is constipated. It depends on the character of food which is fed with the fat. Fat and carbohydrates make a laxative. Fat and proteins are constipating. We find the baby very constipated, with a soapy stool which rolls off the napkin without soiling it to any degree. This is commonly due to too high a fat. The baby in the next bed may have the same formula and not be constipated. The treatment in those cases is regulation of diet, as the Doctor has said, by reducing the fat and increasing the carbohydrates.

I think the Doctor has done a real service in calling the attention of the profession to the matter of constipation in babies. It does no harm, if the baby is well and good, to go without a bowel movement for a day or two. Not long ago I was called to see a baby in the family of a Christian Scientist, and the baby's bowels had not moved for five days. I told the mother I would move them. She said it might be well. I directed some food, and the next day the baby's bowels moved without difficulty.

H M. McClanahan, M. D., Omaha, Nebraska: Much that I desire to say has already been said.

I want to call attention to the fact that constipation in infants under three months is often due to a tight sphincter muscle. It is within the rectum and still the infant cannot expel it. I think a simple remedy is the insertion of the mother's finger, covered with a rubber protector well oiled.

Dr. Kerley of New York in a long series of x-rays has shown that a large number of cases of constipation are due to congenital conditions, as the Doctor has mentioned in his paper.

About twenty-seven years ago I read before the Nebraska State Medical Society a paper on "Constipation in Infants." I thought I had developed something new in those cases by advocating the introduction of the lisle thread catheter into the bowel to mechanically straighten out the sigmoid. Later I found Dr. Jacobi of New York had already covered the matter. Since then I have not tried to be original in any line of treatment.

Every infant more or less is a law unto itself. The question of fats has been much discussed. I feel the pendulum has swung rather far in the direction of too low fats. Based upon the old law that began with Eve in the Garden of Eden, breast milk contains 4 per cent of fat, and therefore it must have been by the Lord himself intended as a pretty good food for young infants. It is entirely true that cow's milk differs chemically and mechanically from breast milk and the medical profession is not doing all it could do to encourage mothers to nurse their infants. That is the crucial question in treatment in these cases. I find four out of five cases of constipation are in bottle-fed infants, and one-fifth in breast-fed infants.

I want to compliment the Doctor on his paper and endorse what he says about glycerine suppositories. They are certainly most pernicious. They will induce proctitis. The worst case I ever saw was due to the use of these. They should not be used. I would suggest the use of gluten suppositories because they act mechanically and do not irritate the mucous membrane. Permit me to suggest, for these infants under six months who are constipated a

simple treatment—namely, the injection into the bowel of one or two drams of olive oil, allowing it to remain over night. The next morning they will probably have a movement; if not, then a small enema.

I believe every child six months of age should be taught to use the nursery chair. I do not believe any well infant of six months should soil its napkin with fecal discharges. If they are put on the chair every morning at the same time, unless there is some mechanical condition or a serious error in diet, they will nearly always have a normal bowel movement. The mother can teach that child to grunt and bear down, and if necessary, tie it in the chair.

Enemas are sometimes a necessary evil.

I feel constipation in infants has often laid the foundation for constipation in later life. In my opinion, the normal, necessary thing for the infant, as well as the adult, is to have one regular daily bowel movement.

Clyde Moore, M. D., Omaha, Nebraska: I want to say a word in commendation of the paper. I think he has covered the subject very thoroughly. One point he emphasized—and that is the fact that a great deal of constipation is not really constipation. It is the wrong idea the mother has that the baby must have a bowel movement every day; consequently she starts out using a suppository or laxative.

Another point I do not believe has been mentioned which I find in a good many cases is the type of constipation which is associated with spasms in other parts of the intestinal tract. We find babies with a tendency toward pyloric spasms and spasms of the anal sphincter. In these cases the use of atropin in small doses until you get a physiological effect is effective in relieving constipation.

As to the use of water: I can not agree that water has any effect in producing constipation. I think it does not fill the stomach and prevent eating the proper amount of food.

L. E. Moon, M. D., Omaha Nebraska: I do not think you find hemorrhoids very frequently in children, but you find prolapsus frequently, which is brought on by straining in the wrong way. I think babies should not be tied in the chair and told to grunt until they strain too much. The proper way is to find out when they use the stool ordinarily. It is a pernicious habit to teach the child to grunt and strain, because it will produce a prolapsus which will remain through life. We see fissures, and the habit of giving enemas and injections may be one of the big factors in producing them. The mother should be taught if she is going to use an injection how to insert the syringe and how far. It should not be inserted three or four inches. An inch or two is sufficient. If it is inserted farther than that, it rolls up and produces a break in the mucosa and a spastic muscle.

I think a little paraffin oil can be given if the stool is hard, and it will help in a great many cases. If you are going to give cellulose and coarse fibre vegetable, you must give enough water with them to keep them moist.

Dr. Hays concluding the discussion on his paper.

Dr. Hays: I thank you for your very generous discussion.

I think the question as to whether it is possible

for an excess of fat to cause constipation has been answered by Doctors Hamilton and McClanahan.

I expected a more severe criticism on my statement about water. It is rather difficult to make a survey of well babies—those who are doing well and thriving; good, husky babies, without constipation—but I have asked this question of mothers of as many as I have been able to find: "Are you following out the instructions about giving the child water?" In most cases the reply is: "I try to, but the baby won't take it. He does not like water."

It is somewhat of a diversion from the subject but it was interesting to me to find in a great many cases of indigestion, failure to gain weight, and constipation, that it was the habit of the mother when the baby cried to give him a bottle of water. In at least fifty cases we had of that type, I stopped the giving of water, administered no other treatment, advised that they give only one-half to one ounce of

water twice daily, and continue the food previously prescribed, with the result that the child gained and its constipation was relieved.

It may not be complimentary to our children to compare them with a little pig or calf or colt, but there might be a thought there well worth while. Did we not learn from the farmer and his cow that the stripping of the breast was the proper way to maintain an ample and lasting milk supply? I did not know until not so very long ago that a little calf or pig or colt did not drink water. I made inquiry from a great many farmers and learned that suckling animals seldom drink water.

My survey of the well children with the confession of the mothers that they was unable to give water, yet their children thrived and did well and were not constipated, is the foundation for the statement. We often give too much water.

I thank you.

AN OUTBREAK OF BOTULISM IN WESTERN NEBRASKA*

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The object of this paper is to relate briefly an outbreak of botulism in western Nebraska, which we were privileged to observe in detail. From this and the circumstances attending we were able to draw rather definite, and we believe accurate, conclusions.

So far as we have been able to determine only three outbreaks have been recorded in Nebraska. Dr. H. E. Harvey of Fairbury reported 4 cases with one death, from commercially canned pork and beans, two years ago. Dr. C. L. Fairbanks, now of California, recently reported two deaths from home canned spinach at Scottsbluff, April, 1919. The third outbreak, which we observed, occurred near Morrill, with three deaths October 26, 1923. This outbreak resulted from home canned string beans. The cases at Fairbury and at Morrill were checked by complete laboratory findings.

In addition, two interesting occurrences have been reported to us at Morrill. Mrs. M. a farmer's wife near Morrill opened a can of home packed, string beans about three years ago, which had been canned several months. Finding them off odor, she dumped them in the yard, where her flock of chickens, about 50 in number, ate the contents of the can. The next morning all the chickens were dead. Mrs. P. a lady living in Morrill, opened a can of home packed corn, about two years ago, which she thought smelled badly. She dumped it out in the yard where her flock of some hundred or more chickens ate the contents. Within

twenty-four hours nearly all were dead. Possibly both cans were charged with the toxin of *B. botulinus*.

Let us first consider briefly the epidemiologic, bacteriologic and toxicologic nature of food poisoning in general, before relating the details of the outbreak of Botulism observed. The public in general, newspapers, and even the profession, to its discredit, are wont to apply indiscriminately, the term "Ptomain poisoning" so that the reported cases when carefully investigated are found to be anything but that. The past loose use of the word has evidently stuck. In our present knowledge of food poisoning, the term ptomain means no more than does the term indigestion, which, in the not remote enough past, covered a multitude of undetermined functional and pathological conditions.

Geiger in and epidemiologic analysis of 749 reported outbreaks of food poisonings in the United States from 1910 to 1922, has shown that nearly all of them may be placed in the group caused by living bacteria and their toxins, or charged to botulism. Out of the 749 outbreaks only 44, or approximately six per cent, were due to botulism. Of the 172 persons affected with botulism 140 died. A mortality of eighty per cent. Of the remaining 705 outbreaks, due to other causes, mostly organisms of the paratyphoid group, the mortality rate was probably less than one per cent. He says, "In all, 40 necropsies, approximately 16 per cent, were

*Read before the Annual meeting of the Nebraska State Medical Association, Omaha, May 13-15, 1924.

performed in 259 deaths reported as having been due to 'ptomain poisoning'. It is extraordinary interesting and important to note that in every instance the original diagnosis was changed to conditions, which in some were clinically, totally dissimilar". In addition he states there were eleven outbreaks, with 19 deaths, in which the evidence was fairly complete that they were either murders, suicides or accidents. He also states, that the original diagnosis in 404 outbreaks of the 749, or 54 per cent, was given as ptomain poisoning by physicians. When we compare this with the results reported above in the necropsies obtained, we must conclude that the term 'ptomain poisoning' covers a lot of diagnostic uncertainty.

In considering the geographic distribution of the outbreaks of botulism, Greiger gives 38 occurring in the western states. The food of one of these was preserved in the middle west. Only 11 outbreaks occurred in the East, South and Middle West, and out of these 11, the causative food of five was preserved in the West. Thus the western states were responsible for 42 outbreaks and the rest of the United States for only seven. In point of time distribution, since November 1921, 30 additional outbreaks of botulism have been reported.

Botulism is the type of food poisoning caused by the ingestion of food containing the toxins of the bacillus botulinus. B. Botulinus was discovered by Van Ermenger, 1896, and was first associated with sausage poisoning, thus the name. It is a large, slightly motile, anaerobic, spore forming bacillus, which grows best at ordinary temperatures, 18 degrees to 25 degrees C, and produces a toxin of great virulence at these temperatures which will remain for months in the food materials in which it has been produced. The toxin is thermolabile, being rendered non-toxic by ordinary boiling temperatures.

There are two types of B. botulinus designated type A and type B, which appear to produce type A and type B toxin respectively. Type B bacilli have been found most frequently in soil cultures, while type A toxin is nearly always the one found in canned food materials and is responsible for most cases of poisoning in human beings. Culture media have been shown to have selective effects on stimulating the growth of type A and B. bacilli. Immunization tests on young

rabbits have demonstrated the formation of antitoxic sera, which are specific for type A and type B toxin. A practical means of determining the type of toxin in a given case is thus afforded.

Washed cultures of B. botulinus have not been shown to be toxic. The poisonous nature is due to the exogenous toxin generated under favorable conditions for its production. These conditions seem almost ideal in canned vegetables such as green beans, corn, peas, etc., where insufficient heat has been used to destroy the spores, or dormant bacilli. Some time, from ten days to several weeks, is necessary to generate large amounts of the toxin. In the outbreak we observed, the canning was done in August 1923 and the poisoning occurred October 25, 1923, nearly three months after canning.

Inoculation tests have shown toxin production greatest in vegetables as named, and much less in fruits, or in the presence of acids, sugar or salt.

Very briefly, the clinical efforts of poisoning in human beings seems to consist of a peripheral motor paralysis, and in the cases we observed, this seemed to account for all the manifest, clinical findings. We will not go into detail here, as these findings in general have been carefully described by Geiger and others, and may be found in the literature. These are apparently two groups of cases. Those having early gastro-intestinal disturbances, with the later paralysis, and the other showing only the paralysis. The general course and the mortality rate for the two groups are the same, thus possibly the early gastro-intestinal signs, when present may be due to irritating by-products of bacterial growth rather than to the specific toxin. The cases we observed had very little gastro-intestinal disturbance.

The paralytic symptoms take place from twelve to thirty-six hours after the ingestion of the food and terminate fatally in a few hours to several days, or recovery may take place very slowly in several weeks or months. No permanent lesions have been demonstrated in cases recovering. Bronchial pneumonia is the most common termination of cases not dying early from direct effects of the paralysis. A differential diagnosis must be made between botulism, epidemic encephalitis, certain forms of poliomyelitis, and cerebral-spinal syphilis, and poisoning

from drugs of the belladonna group and from veronal and wood alcohol.

Our own experience with botulism consists of the following cases which we will give briefly. October 26, 1923, 7:00 A. M., we were called to the home of Mr. L., six miles from Morrill, by a son who said his father and mother and the hired man had awakened not feeling well. On our arrival 7:30 A. M. we found Mr. L., aged 64, and Mrs. L., aged 54, and a young man aged 21, in bed with, at first glance, no evidence of being sick. Mrs. L. said she had gone to bed feeling fine and awakened about 6:00 A. M., feeling tired and weak and unable to see clearly. She went to the bath room, felt dizzy and vomited, but raised nothing but a little fluid. She then heard Mr. L. make a peculiar noise, went to his bed and found him feeling the same but with added difficulty in speaking clearly. He went to the bath room and vomited a rather large amount of sour fluid. Their mouths seemed dry but on attempting to swallow water, choked, and could get but little down. The young man, on being questioned, gave the same history for himself. In addition he had had a good bowel movement. After vomiting the three had had no further gastric discomfort.

A weak but distinct, acrid, and nauseating odor was noticeable about each patient, which we detected came from their breath. This lead us immediately to suspect food poisoning as the cause of their trouble. On questioning Mrs. L. She said they had not eaten any thing unusual. We went to the kitchen and found a dish with a small amount of green bean salad in it, which had the same distinctive odor noticed about the patients. Questioning brought the information that she had opened a quart can of home packed, green beans at noon the day before, and, without heating them, mixed in some sliced onions, and mayonnaise dressing. The three ate nearly all of the salad at the noon meal. Two boys were at school, and a son at home who ate with them did not touch the salad. The whole family had eaten supper together that evening and all had gone to bed feeling well.

The definite history, and the delayed onset of symptoms, and the evident causative food, with the peculiar odor associated with food and patients, lead immediately to a diagnosis of botulism.

Dr. Collins of Mitchell was summoned to help and attempts made to wash out the stomach and bowels of each of the three victims of the poisoning. Each had large bowel movements after repeated enemata, but productive vomiting could not be induced, and a stomach tube passed on each failed to produce returns of any thing but the fluids injected. On passing the tube we noticed respiratory difficulty and cyanosis, and the tube had to be withdrawn in a minute or two to prevent suffocation.

Paralytic signs were developing rapidly, and because of the evident hopelessness of their conditions, further treatment was abandoned except in the case of the young man, who seemed in less serious condition at first. Stimulation was resorted to but he lived only an hour longer than the other two. The first signs of trouble were noted on waking about six a. m., and death occurred at near twelve, one and two, approximately 24 hours after ingestion of the beans.

The cases were watched carefully to determine all

possible clinical signs which, briefly, occurred in the following order: Subjective symptoms noted were muscular weakness, lassitude, blurred vision, a sensation of suffocation, and inability to use throat muscles. Objective signs noted were blepharoptosis, mydriasis, and increasing loss of accommodation to light and distance. Nystagmus was not observed and diplopia was not complained of. Dysphagia and aphonia became progressively worse. Diaphragmatic paralysis with cyanosis gradually occurred, with increasing extrinsic muscular effort at breathing. The heart rate was nearly normal but was rapidly accelerated by the least exertion, becoming rapid and weaker near the end, with terminal slowing to about thirty. The heart action continued for nearly three minutes after respiratory failure. Peristalsis was practically absent from the first, the vomiting reflex very weak, and there was no definite evidence of gastric distress except in the boy near the end, when retching occurred, and a little fluid with particles of green beans was ejected (the only ones seen from any of the three patients). There were no evident signs of sensory disturbances, or paralysis of skeletal muscles. Hearing was normal and consciousness was clear until respiratory failure and deep cyanosis were present. Attempts at swallowing brought on strangling and respiratory difficulty, and each refused to attempt it after the first trials.

The course of each case was equally rapid and nearly identical. The urine was normal. Salivary secretions were nearly absent and secretions of mouth and throat thick and tenacious. Fortunately we had made previous blood pressure records of Mr. and Mrs. L.; these were found to be unchanged. The boy's blood pressure was normal, 112 systolic and 60 diastolic. The temperatures were slightly sub-normal.

A sample of the bean salad was mailed to the State Laboratory at once. They reported *B. botulinus* toxin type A found in large amounts, and found culturally positive later. Another can of beans sent in was found positive culturally at the State Laboratory and it with another sample found positive by Professor Lundgren, bacteriologist of the State University.

Soil samples, three in number, taken from the L. farm, were sent to Dr. J. C. Geiger, U. S. Public Health Service, University of Chicago, where they were found toxic for *B. botulinus*, type A not prevalent. Two soil samples from two gardens in Morrill also sent were found one negative and the other proved toxic for *B. botulinus* type A. The mayonnaise dressing was found negative.

We investigated the canning methods used by Mrs. L. and found the following: A so-called "Toledo Cooker" was used, a tin box 12 inches square and 18 inches high, with two shelves, and two doors on one side, and a water pan beneath three inches deep. This box held 14 one quart, glass Mason fruit jars. The beans were washed and packed in the jars, the lids placed on but not screwed tight, and jars placed in cooker. The cooker was placed on a cook stove and a fire kept going for three or four hours, supposedly keeping

the water boiling in the pan for this time. Only the wet steam at air pressure came in contact with the jars. After sterilization the jars were screwed tight, allowed to cool and placed in the basement in a dark cupboard. The canning was done during August, 1923, and two and one-half months before being used. Several "Cookers" of this type have been used in this community with the common complaint that considerable spoilage occurred, especially with beans, corn and peas. The relative humidity of this part of Nebraska is very low during August. The altitude is a little over 4000 feet. The practical boiling point has been found to be an average of 95 degrees C., 203 F.

Healthy young rabbits were selected and one given one-tenth cc. of the fluid portion of the salad after heating it at boiling point for five minutes, and another was given the same amount unheated. The first rabbit was unaffected. The second rabbit died in 6 days. Great loss of weight had occurred.

CONCLUSIONS:

1. The soil near Morrill contains spores of *B. botulinus*, possibly distributed by winds and irrigation water.
2. *B. botulinus* is probably restricted to local areas, for most part in the western states.
3. The growth of *B. botulinus* may not change the appearance of the canned vegetables in which it has produced large amounts of toxin, but a characteristic though faint odor is probably present.
4. Type B. bacilli occur more generally in soil cultures. Type A toxin is formed more generally in canned vegetables.
5. House-wives and others, doing home canning should be taught the importance of thorough sterilization by heat, and especially greater care at higher altitudes.
6. All vegetables should be heated, on opening, before use, and any with unnatural odors discarded.
7. The term 'ptomain poisoning' should be discarded and more careful investigation and more accurate diagnosis should be made in cases of food poisoning.
8. The symptoms and clinical signs of botulism are definite. Uncomplicated cases need not be confused with other conditions.
9. Increasing numbers of outbreaks of botulism are being reported. Possibly this is due to better diagnostic methods.

10. Botulism is the most fatal type of food poisoning, and because of delayed onset of symptoms, is the most hopeless to treat, except in very mild cases.

This paper would not be complete without recording the following: The serious possibilities of this outbreak were forcefully impressed upon this community because of a peculiar set of circumstances.

This good woman was noted locally for this particular kind of bean salad, which was a great favorite among her acquaintances, and which she invariably furnished in generous quantities at church dinners and other community gatherings. It so happened that the afternoon of the day the salad was eaten with such disastrous results by the three members of the family, she attended a meeting where 75 ladies were served, but for some reason that afternoon she did not help furnish the luncheon. Had she done so, this particular can of beans, with several others, would probably have formed the base of her usually large dish of salad which would have been served to practically all present. What might have happened was very evident.

Acknowledgements: We are indebted to Dr. Floyd M. Collins who helped check clinical findings in the three cases observed, and to the State Laboratory, The Uni. of Nebr., and the U. S. Public Health Service for Laboratory reports.

REFERENCES:

- Jordan—General Bacteriology.
Edwin O. Jordan and J. C. Geiger, *The Journal of Infectious Diseases* Vol. 32, No. 6, June, 1923, pp. 471-478.
J. C. Geiger, *Journal of American Medical Assn.*, Oct. 13, 1923, Vol. 81, pp. 1275-1282. *Public Health Reports*, July 22, 1921, Vol. 36. *Southern Medical Journal*, Feb. 1923, Vol. XVI, pp. 196-111.
Burke, S. *The Differential Staining of Living and Dead Spores*, *Journal Infectious Disease*, June, 1923, No. 6, p. 433.
Schoenholz, P. & Myer, L. F. *Preparation of Antiserum*. *Jol. of Infectious Diseases*, June, 1923, No. 6, p. 417, Vol. XXXII.
Schoenholz, P., etc. *Toxin Production and Signs of Spoilage*. *Jol. Infectious Diseases*, Oct., 1923, XXXIII, No. 4, p. 289.
Burke, G. S. *Studies on the Thermal Death Time of Spores of C. Botulinus*. III. *Jol Infectious Diseases*, Oct., 1923, XXXIII, No. 4, p. 274.
Ebright, George E.: *Clinical Differentiation of Epidemic Encephalitis, Acute Poliomyelitis, Botulism and Certain Forms of Food and Drug Poisoning*.
J. E. Geiger—*Public Health Reports*, July 20, 1923, pp. 1611-1615. *Public Health Bulletin* No. 127, Sept., 1922.

DISCUSSION:

F. W. Heagey, M. D., (Omaha, Nebraska): The speaker made some mention of differential diagnosis and the cause of mistakes in diagnosis in a process of this kind.

In 1918 or before, when epidemic encephalitis first broke out in Engalnd, a diagnosis of botulism was made at that time, and a great many papers written on this peculiar outbreak.

As far as encephalitis is concerned, in the first place, you probably remember the existence of more than one case in a family at a time is extremely rare. In the second place, it is generally preceded by an acute infection of some kind — probably head cold or respiratory infection. In the third place, it can have these intestinal upsets and cranial nerve disturbances. The point of differentiation mostly comes in the spinal fluid. The odor and history of the taking of food, and the number of cases involv-

ed, I think serve to differentiate it from epidemic encephalitis.

DR. COOPER: I have nothing in particular to add, except the Doctor mentioned the point of the odor.

I wish to mention the character of the beans themselves. These beans appeared perfectly fresh and had no apparent discoloration. The jar was not swelled. There was no evidence of leakage. It looked like a good jar of beans. Yet the lid from this jar and the beans had a peculiar odor — something similar to butyric acid, yet it had something else along with it. I think I shall never forget the peculiar odor associated with the patients and the beans. It was this odor more than any other one thing, along with the finding of the beans, that led to the diagnosis immediately.

I do not know when the symptoms began. They woke up in the morning apparently feeling well, and in a few minutes noticed something wrong.

ROENTGEN RAY TREATMENT OF UTERINE FIBROIDS*

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Uterine fibroids or myo-fibroma are tumors having their origin in the musculature or wall of the uterus. Histologically they are made up of smooth muscle fiber and connective tissue. They may be single or multiple each individual tumor being spheroid in shape and generally quite regular as to outline. Irregularity in outline or those having a nodular appearance is due to the multiplicity of tumors appearing as one mass.

The etiology or origin of uterine fibroids as yet seems an unsolved question. Recently some investigators have reported the finding of islets of tissue in the uterus of the fetus or embryo which they believe to be embryonic fibroid tissue, which later would develop into mature fibroid tumors.

Whatever the etiology, the tumor has its origin in the uterine wall. From here it continues to grow to a varying size. It is encapsulated and as it enlarges, it separates the uterine muscles making room for itself as it grows. 60% to 70% are confined to the wall of the uterus and are classed as intramural fibroids; 10% to 15% grow toward the uterine cavity and when they break completely through the musculature to the mucous membrane lining the uterus they are classed as submucous fibroids; 20% to 30% grow toward the outer wall; the uterine muscle separating till only the peritoneal coat remains intact. These are classed as subperitoneal fibroids. In some cases the

uterine muscles close behind the tumor mass, completely separating itself from the tumor, except for the peritoneal covering, in which case they are classed as pedunculated. The pedicle may vary greatly in length, in some cases being sufficiently long to give the tumor comparative freedom in the abdominal cavity.

Uterine fibroids are perhaps more common than any of the other new growths, the majority of which produce no clinical symptoms and for this reason pass unrecognized. About 70% of the cases occur after the fortieth year; or perhaps a better way to state it would be, the disease has progressed to a stage where it has begun to manifest itself in one of the following ways:—

1. Menorrhagia, which may vary from a scant irregular flow, to a very profuse or even exsanguinating flow. In the beginning this is usually manifested most at about the time of the menstrual period which is increased and prolonged. As the case progresses, the flow may become more irregular and protracted, or even continuous.

2. Leucorrhea may be the predominating symptom and the reason for the patient's coming to the physician.

3. Pain is not always present. It usually appears later in the course of the disease and is manifested as a backache, or pain in the lower abdomen. It is not constant at first and is usually worse at the menstrual periods or when the patient is on her feet.

*Read before The Iowa Radiological Society, Des Moines, Ia., Feb., 1924.

4. Pressure symptoms appear after the tumor has attained some size. These appear as a feeling of weight in the pelvis or some bladder irritability. Constipation is frequently observed in these cases.

5. Rather infrequently the patient comes complaining of the tumor or enlarged abdomen. However, the size of the tumor has nothing to do with the seriousness of the symptoms, as many times a tumor small enough as to be almost unrecognizable by bimanual examination, may be the cause of a violent hemorrhage and distress. This is particularly true of the submucous type.

Most of the cases of uterine fibroids are first seen by the men in general practice and according to the customary procedure usually followed until the last few years, one of two things happened. The patient was either given palliative treatment, which was not successful, or she was referred to the surgeon.

It is not the purpose of this discussion to condemn surgery in any way as a method of procedure in the cases, notwithstanding the fact that it has been our privilege to see fibroids removed and others spring up and take their place in a comparatively short time with all the former classical symptoms. However, we would like to mention the fact that uterine fibroids may be successfully treated by radiation and later submit a few points for the comparison of the two methods.

That x-ray is an efficient and adequate form of treatment is evidenced by the combined reports of many men whose cases total thousands in which clinical cures have been effected in more than 95% of the cases. While the reports of many men might be quoted, Dr. Becleres' report of 400 cases will suffice. These cases classified as to age shows 24.5% over 50 years of age; 64% were from 40-49; 11.5% were between 30 and 39 years. 15.5% of the tumors were confined within the limits of the pelvis, while 84.5% extended into the abdominal cavity. He employed the fractional dose through multiple ports of entry. 83.5% did not bleed after the third menstrual period following the beginning of treatment. Some of his cases showed reduction in the size of the tumor as great as 14 to 16 centimeters. He concludes that with the exception of those cases demanding immediate surgical

interference, all cases are suitable for radiotherapy.

A few years ago we were using the fractional dose method and multiple ports of entry but for the past two years, have been using a single larger port of entry 6x8 centimeters for the ordinary case—larger if needed with the following dose: 150 to 200 K. V. 3 ma. $\frac{3}{4}$ mm. of copper and 1 aluminum filter, 24 inch distance, 2 to 2½ hours. This is sometimes repeated in two months but rarely is further treatment needed.

The difference in voltage, and time is varied with the difference in size or thickness of the tumor and the thickness of the abdominal wall.

I have not yet seen a case that was not benefited at the end of the first month, and none have come to operation. Clinically, they are well. All seem satisfied with the fact that they escaped an operation. Some were treated because of the fact that they refused an operation; others because they were poor surgical risks; my own cases coming unrefereed because I felt it was the best treatment.

Now let us compare the two methods of treatment. Surgery entails the following:—

1. Hospitalization for two to three weeks.
2. Dangers and inconvenience of an anæsthetic.
3. Dangers of operation, as post operative hemorrhage; infection, phlebitis, adhesions.
4. Are apt to recur if hysterectomy is not performed.

5. A certain primary mortality.

6. Several weeks or months convalescing. What does the x-ray treatment offer:—

1. Cessation of hemorrhage: if flowing at time of treatment usually within a week or ten days.
2. Patient immediately picks up and begins to feel better.
3. Marked reduction in the size of the tumor. Sometimes within a few days, always within four weeks.
4. Relief of clinical symptoms.
5. There is no operative risk.
6. No hospitalization; if patient is up and around, she may continue.
7. No period of convalescence.
8. No post operative complications.
9. Treatment is painless.
10. No primary mortality.

While experience leads us to believe that x-ray treatment is the treatment of choice, there is certainly but little argument against the surgical treatment if the patient is a good risk and wants an operation. Fibroids that are pedunculated or that have begun to degenerate should be treated surgically. Positive indications for x-ray treatment are all poor surgical risks, as follows:—

1. If red blood cell counting is below 3,000,000.

2. If hemoglobin is below 50%.

3. If patient is suffering from some debilitating constitutional disease.

4. If patient refuses operation.

Excepting the cases falling into the two classes mentioned in which surgery is positively indicated, and the plain classes in which x-ray treatment is positively indicated, all other cases should have the two methods of treatment properly explained to them and the patient make the choice.

DEMENTIA PRAECOX*

Marie L. Grote, M. D., Lincoln, Nebr.

Dementia Praecox takes its enormous toll from the adolescent youth, and young adult population of the human race. Of all the admissions to the Lincoln State Hospital, 32½% belong to this class of insanity. It is no respecter of the educated, cultured and refined, for these, like the less fortunate from the standpoint of education, and good environment, contribute quite as many victims to this most dire catastrophe of the human race.

The four principal divisions of this disease are given as follows:

- (a) Paranoid Type,
- (b) Catatonic Type,
- (c) Hebephrenic Type,
- (d) Simple Type.

Dr. George H. Kirby quotes as follows: "Kraepelin looks on all of the varied pictures of dementia praecox as manifestations of an underlying disease." Kraepelin's theory seems to be corroborated by Dr. Robert Keilty, who made the following statement at the seventy-eighth annual meeting of the American Psychological Association, at Quebec, Canada, June, 1922: "Mental diseases are primarily or secondarily dependent upon general body diseases, unless they are purely the result of a specific stimulus, or hereditary deficiency".

Hauptman says, "Heredity plays a prominent role, and lowers the mental threshold, so that somatic influences which would otherwise pass unnoticed become prominent. And again, "Somatic influences start early in life, and are toxic in nature—either bacterial, chemical, or both, and may be specially operative in praecox cases." Hauptman found

an increased rapidity of blood coagulation in catatonic cases.

Patrick and Bassoe say, "Investigations indicate diminished thyroid activity, a condition the presence of which in dementia praecox is also rendered probable on account of the Abderhalden tests with thyroid. These findings correspond with the experience gained in the study of thyroidectomized animals, and in human myxedema — these findings indicate the advisability of persistent thyroid treatment in dementia praecox."

Physiologic and chemical deviations are reported from laboratory tests made by Emerson, Gay and Hall, and by Raphael. They report a lowered uric acid content. The blood sugar was markedly increased. "In catatonic cases there was usually diminution in leucocytes, with a count from 4800 to 5500. In old and severe cases, the count would run from 3000 down to 1500. The red cell count, on the other hand, was usually higher than normal, from 6,875,000 to 7,550,000. The differential leucocyte count quite constantly showed relative increase in mononuclear cells, especially in the severe cases with marked leucopenia. The percentage of eosinophiles was usually low, from 1.9 to 0.39 per cent. In the hebephrenic cases, the leucocyte count was normal except during periods of excitement, when the count would go up to 12,800, or even to 15,000, the increase being usually in the polymorphonuclear cells. The red cell count was always high in the hebephrenics, excepting at the excited periods, when it was found decidedly reduced — 3,500,000 to 2,575,000. The percentage of hemoglobin, and the blood pressure, were normal in both groups, and the blood pressure was not influenced by stuporous or ex-

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cited states". Lymphocytosis is, however, not characteristic of this disease, and great care must, therefore, be exercised in the application of this factor, from the diagnostic standpoint.

Dr. Ransom A. Greene, at the Danvers State Hospital, Hawthorn, Mass., says, "I was impressed with the statement of Kraepelin, that syphilis is a common occurrence in dementia praecox, and that recent syphilis is often found." In 495 cases of dementia praecox cases examined by Dr. Greene for syphilis, only 8 cases gave positive Wassermann reactions, and their spinal fluid reactions were negative.

Dr. Robert Keilty defines disease as: "A disease is a reaction to an injury or stimulus producing cellular and group unit changes, responsible for an altered physiology characterized by subjective symptoms and objective signs." This definition seems to be corroborated by Raphael, at the State Psychopathic Hospital, Ann Arbor, Mich., who says, "The question of the physiology of dementia praecox is of distinct interest, academically, of course, from the standpoint of the possible determination of basic somatic, or, better, perhaps, somatophysiological reaction, with derivative significance as to the importance of course, phase, and even as to the essential validity of the at-present obtaining typage hierarchy. Practically, too, this consideration possesses a real interest, particularly through the possibility of primary susceptible implication as regards the endocrino-autonomic field, and actually concomitant patho-physiologic deviation, with its inseparable metabolic and vegetative relationship, wholly aside from the matter of somatic or psychic primacy, factors obviously of vital importance from the point of view of rational clinical comprehension and therapeutics." He goes on to say that there is indication in this disease of fundamental metabolic change, associated with a certain endocrino-autonomic dysbalance, as is very evident from even a casual scrutiny of the already bulky literature on the subject.

The occurrence of striking vasomotor disorder, bradycardia, vascular hypotension, transient thyroid swellings, dermic changes, and other features is suggestive of vegetative deviation, as is pointed out by Kraepelin, and later by Eppinger, Hess, and by Buchler, who reports the frequent occurrence of vagatonic trends. Uyematsu reports thyroid de-

ficiency; pituitary, adrenal, and mixed types are reported by Buchler; the frequent status lymphaticus, by Emerson; thyroid, adrenal, pituitary, and polyglandular states, by Lewis and Davis. Hypooxidation has been reported by Mott, and latterly noted by Kirby and Gibbs. Uyematsu and Soda have found a lowered uric acid output. The oxidase content of blood and spinal fluid, of acute and chronic cases, has been noted by Hyaschi, who has found a distinct hypooxidation trend in the acute cases.

Increase of blood sugar tolerance studies have been reported by Lorenz, Olmstead and Gay, Hall and Neymann, and Parsons. Dr. Edith R. Spaulding makes the following statement in an address given before the American Medical Psychologic Association, June, 1921: "It is with the group of cases in which other organic disease has been, as far as possible, ruled out, but which still show the presence of glandular imbalance, that we are primarily concerned. At the present time, the patient who suffers from an endocrine disorder, which is associated with mental symptoms, rarely is given the benefit of both glandular treatment and a mental analysis, utilized concomitantly as necessary elements of a rational scheme of re-education."

Kraepelin says, "We have to do with progressive, destructive disease processes, which apparently begin in early childhood or adolescence." Some authors hold that a distinct personality results from the dysbalance of the group unit, according to the particular organ involved.

Jelleffe and White rather discredit the term dementia praecox, inasmuch as cases develop after thirty years of age, and speak of it as a syndrome, in which dementia is a relatively early symptom, and in which recovery occurs only when the disease has not progressed to any extent, Bleuler has suggested the name schizophrenia, implying a splitting of the personality, which he thinks is the fundamental symptom.

The question of heredity has been studied by Wolfsohn at the Bergholzi Asylum in Zurich. The study of 2,215 admissions showed 647 cases of dementia praecox, of whom 90% showed hereditary taint. Of four factors, mental disease was the most frequent, about 64%, followed by nervous diseases, alcoholism and other forms of hereditary taint. "In dementia praecox there is always found a union of two families with hereditary taint,

whereby, even in childhood, the pathological features due to the heredity come to light, that is, first a shyness, and later an unsocial-ability."

To summarize, the laboratory findings in cases of dementia praecox, insofar as we know at present, are about as follows:

- (a) Glandular dysbalance,
- (b) Hypo-oxidation of blood and spinal fluid,
- (c) Increase in blood sugar,
- (d) Leucocytosis and a diminished red blood cell count during the disturbed period of hebephrenic cases,
- (e) At times, syphilis.

It would seem, then, that in the light of the meager chemical, bacterial, and other laboratory findings now in our possession, that the establishment of well-equipped laboratories in connection with all hospitals for the insane, is necessary, to enable us to follow up these clues which may prove helpful in leading us to a better understanding of the causation of dementia praecox, thus enabling us to re-establish a normal balance of mental and bodily reaction.

It is well to remind ourselves of the fact

that preventive measures which are of prime importance here have as yet scarcely been touched upon:

First, sterilization of mental defectives, and segregation of those suffering with venereal diseases, until cured, in order to prevent the spread of those diseases.

Second, the establishment of community centers, for the training of the laity, especially of parents and teachers, in order to enlist their intelligent cooperation in the detection of the first signs and symptoms of mental abnormality in the children and youth of our land.

Early hospitalization of all cases showing mental abnormality, after all physical causes, such as adenoids, diseased tonsils, defective sight, auto-intoxication, malnutrition, etc., have been ruled out.

When all is said and done, we have to admit that we do not know the cause of dementia praecox. Few people possess through inheritance or training that perfect poise as did Washington, of whom it has been said. "From the first, he achieved a well-nigh miraculous adjustment of his faculties and powers to the wayward circumstances of life."

COOPERATIVE MEDICINE FROM THE STANDPOINT OF THE PATIENT*

H. M. Hepperlen, M. D., F. A. C. S., Beatrice, Nebr.

Every patient, when he comes to the physician, has uppermost in his mind two questions. First—"What is the matter with me?" and second "Can you cure me?" or "What can you do for me?"

If we today, are to play fair with the patient, we must conscientiously and honestly face, solve and answer these questions.

We must no longer attempt to shroud the practice of medicine in mystery. The average intelligent citizen is demanding, that he be given a reasonable explanation, for the symptoms that are distressing him. The physician can no longer count the pulse, look at the tongue, and write a prescription, and be considered as practicing efficient medicine.

I question if there has been anything, that has so retarded the growth of confidence of the public in the medical profession, and has so fostered the development of quackery and

fads, as inexcusable errors in diagnosis, due to insufficient examination.

If we are to answer these questions propounded by our patient and if we are to successfully treat him, we must first determine what is the matter with him.

The very first essential in the correction of any physical ailment is a correct diagnosis, without which all treatment is empirical, and with which, treatment becomes rational.

That which has characterized scientific medicine, and differentiated it from the work of the faddist and the charlatan, has been, and always will be, its tireless pursuit of the truth, which in its application to the practice of medicine, means constant endeavor to make an accurate and complete diagnosis. If we are to progress in the practice of medicine, we must place diagnosis in the foreground where it rightfully belongs.

Every physician who has practiced general medicine, knows and feels his limitations

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in the examination, diagnosis and treatment of a large group of cases, that do not admit of ready and accurate solution, but require the aid of specialized assistants.

The advancement in the field of medicine has been so rapid, and the field of medicine has become so broad, that it is conceded by all leading physicians, that it is impossible for one man to acquaint himself thoroughly with the whole field, much less to attempt to do its work.

Physicians have come to depend to some extent on the skill, ability, and specialized training of other physicians, that they may the more accurately diagnose disease, and more efficiently care for their patients. For this reason a spirit of cooperation must take the place of the old spirit of competitive jealousy. "No man liveth to himself," and no physician, no matter how well trained, is self sufficient in his practice. W. J. Mayo says "Our failures as a profession are the failures of individualism, the result of competitive medicine. A frank recognition of the necessity for cooperation is necessary". Since cooperation is necessary to successfully practice modern medicine, we believe that the closer the cooperation, the higher will be the degree of service rendered.

The medical department of the U. S. Army during the World War, demonstrated to all the efficiency, of unhampered cooperative medicine. The Base Hospital Unit was an excellent example of group practice.

We believe that group practice is the highest type of cooperative medicine, and renders the best service to the patient. Every group should comprise at least, an internist, a surgeon, and a gynecologist, a pathologist, a roentgenologist, a urologist and proctologist, a specialist in eye, ear, nose and throat diseases, a dentist and a trained nurse. The number of specialists in the group, should be increased from time to time to meet the requirements or needs of the community in which the group is located.

It seems timely to discuss the relation of the general practitioner to group medicine. As advocates of the group we do not subscribe to the theory that the general practitioner will cease to exist.

There are a number of conditions and ailments, which admit of somewhat ready diagnosis, without detailed examination, and which permit of treatment in the home. There are and probably always will be, the

emergency conditions, where it is necessary for the physician, to see the patient promptly in the home, at least for the first visit, and to determine whether or not, the condition is one that can be properly cared for in the home. The general practitioner must be a physician of large sympathy, and general knowledge, and his position is, and always will be, of the greatest importance. He comes in closest contact with his patients, and is the family adviser in matters of health. There is a feeling existing between the patient and his family physician, which the man who practices group medicine can not have. Not every physician is adapted by nature and training to be a good family physician. Neither is every physician who practices general medicine, successfully, adapted to the practice of group medicine. The general practitioner of the future, who desires to hold his place, and his practice in the community, will recognize his field, and his limitations, and will no more attempt to care for a case, that is outside his field, than will the specialist in eye, ear, nose and throat, attempt to do abdominal surgery.

The group should be of great service to the general practitioner in a large number of cases that do not admit of diagnosis without detailed examination; or that require treatment of a type that he is not equipped to give. When the general practitioner attempts to treat a case for which he is not especially trained, and equipped, he brings discredit on himself, and upon the profession. Often the patient passes out of his hands, perhaps to an osteopath or chiropractor. He may go directly to a group, and when asked by the internist, who takes his history, as to who is his family physician, will maintain that he has none. He may state that he has been under a certain physician's treatment for a long time, but because he did not feel that he had sufficient examination, or that the physician understood his case, he had consulted the cultist and because he had not improved he now comes directly to the group, to find out if possible what is the matter with him.

Now in instances of this kind, the group is often censured, for not communicating their findings to the general practitioner, who formerly treated the case, and still maintains that the patient belongs to him. If the patient is willing, such a report should be made, but in some instances — yes in far

too many instances — the patient will not permit, maintaining that he has lost confidence in the physician, and wishes to be under the direct care of the group.

Every properly formed ethical group, much prefers that its patients be either brought to the clinic by their family physician, or referred by him. Then can there be true cooperation, and better service to the patient.

The family physician should make a just charge for this service. No ethical group, can or will, make this charge for him. The patient must not be exploited, for the financial benefit of either the group or the family physician, and no ethical group will subject any patient, to an examination, which is not necessary for the accurate diagnosis of the case.

Instead of the group being a menace, to the general practitioner, as some few would have us believe, the group should be, and will be, we believe, his salvation.

No patient, regardless of his financial condition, whether rich or poor, should fail to receive adequate examination, to arrive at a diagnosis.

Now as to the specialist: The conscientious specialist today finds himself confronted by precisely the same difficulties, that disturb the general practitioner, in an honest attempt to obtain for his patients, the best medical science can offer, in diagnosis and treatment. Whatever his field, he, like the general practitioner, finds himself constantly in need of expert opinion in other fields, to correlate with his findings. Granting then, that collaborative effort, on the part of several specially trained men, is often necessary to establish an accurate diagnosis, and lead to proper and rational treatment of a large number of conditions, the question of importance, is how can such medical service be best accomplished? The experience of the past has demonstrated, that such a service can not be efficiently rendered, by a number of specialists, working independently of one another. Under such conditions there is much repetition of work, and unnecessary expense. Worst of all, there are often serious omissions in the examination. Given the necessary professional talent there must be in addition, close cooperation of the several specialists making the examination with the proper collection, interpretation, and evalua-

tion, of their findings. This often requires, the calling of case conferences. I consider this one of the greatest benefits to the patient, as well as the physicians in the group. Then, too, the patient requires professional guidance, and some one must give to the patient a summary of the findings. With the patient to be referred from one physician's office to another, in different buildings, or perhaps in different parts of the city, real cooperation becomes increasingly difficult the more they are scattered. The frequent necessity, for communication between specialists, the advantages of easy access to complete records of the case, are in themselves, reasons sufficient in our estimation, for the grouping, in one suite of offices, of such a staff.

All of the resources of science, should be utilized, if necessary, in the investigation of any malady.

The health of its people is a nation's greatest asset.

The public is alert to present day advances in medicine.

If we render the high degree of service, of which the profession is capable, cults, and present day criticism, will vanish.

FIRST AID IN CARDIAC ASTHMA

According to K. Grassmann (Munich) the patient who has previously been treated with digitalis can without hesitation be given, besides morphine, caffeine and camphor (20%) subcutaneously 1-4—1-3 mg. strophanth, strictly intravenously; this can even in case of need be repeated a few hours later, if caffeine and camphor produce no effect. With a tense pulse (hypertonus) or severe cyanosis resulting from the failure of the right side of the heart (in scoliosis, emphysema, etc.) venesection (5 ccm. blood per kg. body weight) is indicated. For rapid digitalisation per os (less suitable for permanent use) Verodigen (Bohringer) is the best. (W. m. W. No. 2, 1924.)

RHAGADES OF THE ANUS — TREATMENT

R.: Novocaini hydrochlorici	0.10 gm.
Extracti belladonnae	0.05 "
Ammonii sulphoichthyolici	6.00 "

M. D. S. To be applied deeply into the folds of the mucous membrane. (Il Policlinico).

PRELIMINARY REPORT ON EXPERIMENTAL NEPHRITIS INDUCED BY THE USE OF STREPTOCOCCI*

Geo. W. Covey, A. M., M. D., Lincoln, Nebr.

To present a paper fully covering the work we have done on experimental nephritis, would consume more time than is at my disposal here, and would perhaps bore you with its detail; therefore, I am taking the liberty of condensing the original paper and omitting the description of the technical detail.

It seemed to me that, in the first place, there were in the literature such a great number of classifications of nephritides and of terms purporting to signify varieties in pathologic picture, that it was impossible to select a working classification that could reasonably be coupled with the clinical findings on one hand, and with the pathologic picture on the other. In the second place, most of the work on animals has been done by the use of chemical poisons such as uranium nitrate, bichlorid of mercury, etc., while clinical nephritides are usually associated with and probably induced by bacterial infection, often of the streptococcic variety. We set out, therefore, to produce bacterial nephritis in order to observe the clinical and pathologic pictures and compare them with the human types in an effort to clarify if possible the classification, and associate the pathology with the clinical picture.

On this basis we induced nephritis in twenty-two rabbits by the injection of streptococci of five strains, isolated from the teeth or tonsils of patients. We studied these animals over periods of from twenty-four hours to several months. Most of them received repeated injections of organisms and none was permitted to recover. The urine was studied in detail as to quantity, chemical and microscopic findings. The blood chemistry was investigated and the functional capacity of the kidney as shown by the output of phenolsulphonephthalein, was estimated. Finally the animals were autopsied and the kidneys examined grossly and microscopically.

We were able to show that these animals followed a course closely parallel with cases of human nephritis, showing many of the variations that might be described by some of the terms such as hemorrhagic, glomerular, tubular, etc., that are used to describe human varieties. There was, however, no one

so-called type that was characteristic of a given strain of organisms but the variations seemed to be determined more or less by chance, or possibly some individual characteristics of the animals. The first slide that I will show is a composite chart presenting some of the clinical findings.

When I have shown you the pathology observed in these kidneys; it will be evident that one could not predict from it, with any degree of certainty, what clinical variation was present in the animal, and that there is marked similarity in the lesions, the greatest variation being in the extent of the lesions and the degree of destruction of kidney elements occasioned by the trauma.

When bacteria that are selective for kidney arrive at this organ by the vascular route in these animals, they attack it in three main areas. The commonest is the narrowest point, the glomerular loops, the next most common is in the smaller branches of the straight vessels as they approach the capsule, and the least common is the larger vessels at the cortico-medullary junction. The characteristic lesion is an area of cellular infiltration or other exudative process, in the first instance in or about the glomeruli whose vessels are attacked, in the second, a V-shaped area, base to the capsule of the kidney, and in the third about the vessels at the cortico-medullary border. All kidney elements within these inflammation areas are gradually destroyed and disappear. Fibroblasts make their appearance in about two weeks and eventually a scar remains with consequent contraction. This is modified considerably at the cortico-medullary border, where the immediate destruction of parenchyma is minimal, but it is easy to see how eventual lessening of blood supply in these affected vessels of large caliber might produce the so-called primary contracted kidney that we think of as a type of chronic interstitial nephritis.

Control experiments were made using sterile filtrates of 72 to 96 hour cultures, injected into the rabbits' veins, and have been found to cause degenerative lesions in the glomeruli and tubules with albumin, casts, retention of urea and reduction of phthalein output. The lesions have been comparable to those produced experimentally by chemi-

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cal poisons and to those seen in pneumonia, typhoid fever and other bacterial diseases where the invading organism is not kidney selective, but in no animal could we produce a true inflammatory lesion such as we have shown above, induced by direct bacterial attack.

In the kidneys of human cases of nephritis, we have been able to trace lesions comparable in every way with those shown here and considered as truly inflammatory.

It seems fair to conclude, therefore, that we have nephropathies which may be divided into—

I. True nephritis — acute or chronic, involving primarily the vascular system of the kidney and leading to the so-called secondary contracted kidney.

II. Toxic degeneration of the kidney due to products of bacterial growth, chemical poisons, or poisons of any nature that may enter the body and attack the kidney.

III. The kidney of arteriosclerosis. This may be at times the result of direct bacterial attack on the vessels of the kidney and would then be included under the first class, but it must be considered at present as prob-

ably occurring in the course of generalized arterial disease. The end result of this has been termed the primary contracted kidney.

Such a classification can be coupled easily with the findings seen clinically and with the pathologic picture seen at the end. It is simple, and does not seek to go beyond the reasonable facts that can be obtained by clinical study. If there is particularly bloody urine in the early acute stage, what does it mean to say hemorrhagic nephritis, beyond describing clinical findings? It probably means only a minor variation in the lesions I have described and not a true and individual pathologic picture. There does not seem to be any reason for guessing whether few or many tubules are destroyed or whether more or fewer glomeruli are involved. It would seem that there is probably never a true parenchymatous or glomerular nephritis.

Whether it is possible to differentiate clinically between a purely degenerative lesion and a true inflammatory, we have not tried to determine, but we believe it may be done, and will try to show how, when further study has been undertaken.

HEREDITY*

O. M. Moore, M. D., York, Nebr.

I am aware that my treatment of this subject will not be conventional. The term will not be used as a basis for the discussion of the so-called hereditary diseases, but rather to call attention to some of the natural laws that govern inheritance, both as a factor for good and as a menace to our civilization. To do this, let us review our knowledge of the physical basis of heredity:

It is demonstrable in the germ cells. It is not fickle and variable but true and constant and dependable. Its power for evil can be as great as its influence for good. It is unique in the fact that it will be sustained and upheld — that it will be restrained and withheld — in the solution of a problem that confronts America if not the world. A problem so serious that its proper solution will mean happiness and prosperity — that if not solved will mean decadence and a bar to progress.

Before taking up the physical basis of

heredity, let us trace what it has accomplished in preserving racial continuity and characteristics over long periods of time. As our racial stock has been derived largely from Europe, let us look for our family tree where in the dawn of history, barring wars, the natural evolution of the "genus homo" was not interfered with and Dame Nature solved her problems with ruthless hands as regards the elimination of the unfit. It seems to us now that at that period Evolution worked silently and automatically, but that now, it needs a conscious and guiding hand.

Not for academic study or discussion, but for practical application later, let us refer to anthropological research to explain the persistence of racial stock and types, each carrying with them their mental as well as physical characteristics.

Five thousand years ago, what is now called the Scandinavian peninsula and more than half of continental Europe was peopled with a tall blond, blue-eyed race of men — long faced—the harmonic type. Filtering into cen-

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tral Europe from central Asia some tribes reaching as far west as the Atlantic Ocean, came a different type — short, stocky brunettes with round heads and broad faces. Still another type from farther south in Asia followed the shores of the Mediterranean Sea and the African littoral up the coast of Spain and France to England.

This latter race of men were short in stature, both blonds and brunettes — but with long heads and faces. These are the three primary races of Europe — Nordic, Alpine and Mediterranean.

Twelve hundred years later or 1800 years B. C., the Nordics outnumbered the Alpines many times, and by 1100 A. D. the disparity was still great, but at the present time only the Scandinavian peninsula and a narrow rim of northern Europe is purely Nordic. Southern Europe and practically all of Russia from the White to the Black Sea is Alpine — and to show the further persistence of racial stock we know that in Dorgone province in France are the remnants of a race of men with long heads and broad faces — disharmonic — called Cro Magnons — who occupied the greater part of Europe 25,000 to 40,000 years ago. Has this persistence of racial stock been due to environment, isolation, culture or lack of culture? No, it has been due to heredity alone, to the “germ plasm” brought to our attention by Weisman in 1892. He taught that the “somatic cells which by division and differentiations build up the body of animals and plants have little or nothing to do with heredity, but that the “germ cells” with their chromosomes which have little to do with the life of the individual, are concerned only with the propagation of the species”. This is in accord also with the wonderful work of Gregor Johann Mendel who gave us the “Laws of Inheritance” written in 1865 but not promulgated until 1900. These laws were expanded and confirmed by later scientists.

Lorande Loss Woodruff remarks in regard to Johann Mendel's work: “We can pause only to say that the fundamental principle of the segregation of the genes of the alternative characters within the germ cells which Mendel's work indicated has been extended to other plants and to animals and from being as at first thought a principle of rather limited application now seems to be the key to all inheritance, and the present results are extremely convincing because cy-

tological studies on the architecture of the chromosome—complex of the germ cells keep pace and afford a picture of the physical basis of the mechanism by which the segregation and distribution of genes by the Mendelian formula take place”. It has been asserted that two agencies alone are effective in modifying or destroying “germ plasm”—that is alcohol and luetic infection.

If you wish to note the progress made in our knowledge of cell life including the germ cell — read Huxley's address “The Physical Basis of Life” delivered before the British Association in 1868 — and Tyndall's Belfast address before the same Association later. These compared with Edmond B. Wilson's lecture on “The Physical Basis of Life” delivered before the Association for the advancement of Science in 1922. Huxley evidently had no conception of the cell as a “colloidal system”. He believed that a cell was a homeogenous bit of protoplasm surrounded by a cell membrane and enclosing a nucleus and nucleolus — not that there were two equally important nucleoli. The significance of the “plastic bodies”, the “golgi” and “central” bodies, the condrosomes, splitting longitudinally, then dividing crosswise forming the chromosomes, the actual physical basis of heredity was not recognized.

What does it mean to us that a great race of men whose characteristics perpetuated by unfailling heredity is declining? It means that while they were called, and were barbarians, they were more capable of development than the peoples they conquered in the past. It means that they were the explorers, the first maritime people — the fighters, conquerors and executors of the world. It means that their descendants are being out-bred and displaced by people less efficient. It concerns America much, for while London has only 3% alien population, Paris 6%, Chicago has 37% and New York 46%.

It means that France had to lower her requirements in height for the military draft 4 inches in 20 years. It means that one million five hundred Polish Alpines in New York watched our mentally and physically equipped troops march away to the World War while the watchers were mentally and physically safe from the draft. They will out-breed us, for their infant mortality is the lowest in the world. They are immune to crowding and filth — furnished with phy-

sicians and visiting nurses to insure the result. It means the diminution of the class from which are drawn our "pinnacle" men, the LEADERS who direct the world's work in Art, Literature, Finance and Business and these men are not so numerous as you might think. One per cent of such men taken from any city in the United States would seriously cripple it and 10% would all but ruin it.

You ask — Will not the "Melting Pot" give us a new and useful "blend of humanity?" The answer surely is no. Environment, polish and culture (acquired characteristics) may improve the individual, but cannot be transmitted to posterity. As Edwin Grant Conklin remarked, "You can make a jack-o-lantern out of a pumpkin, but if you plant the seeds you will raise pumpkins, not jack-o-lanterns." McCauley says that civilization will never again be threatened or destroyed by the barbarian from without but by the barbarian from within, and the barbarians within the confines of our country are propagating their species at an alarming rate — for the dependent, vicious, and physically and mentally unfit are increasing at a dangerous ratio — when compared to the increase of normal individuals, for the laws of heredity and inheritance function as surely with the former as with the latter class. The census of 1920 give the number of inmates of our penitentiaries as 163,889— feeble-minded and insane, exclusive of work houses and alms houses as 232,680, and an authority states that the feeble-minded cases not confined in institutions are 6 to 1 or 1,396,080, and with some restrictions any man and woman of the borderland, feeble-minded cases or those confined in institutions, when liberated, are free to marry and beget their kind, and if there be progeny (and they are noted for large families) it will be of their kind — for no feeble-minded individual has normal children. Now what is the remedy proposed?

It will do us no good to visualize an Utopia and imagine ourselves occupying it. The details must be worked out, by this and succeeding generations. "It is a condition and not a theory that confronts us".

And now we have stated our case, what is to be the remedy? It takes many years to crystalize public sentiment into rules, regulations and laws even when they are not vigorously opposed. Restraint will bring the criticism of putting shackles on "personal

liberty". Laws should have supervision over the well to do — as well as the ne'er-do-wells. Madam Uplifter would prefer to go into the slums and feed other women's children than to bear children of her own. Humanitarianism is commendable. We will care for those who have arrived who cannot care for themselves, but something must be done to curtail the number of unfit who are yearly dumped into the lap of charity by parents who are discounting that action in advance. A valuable start has been made in our recent immigration laws and our mild marriage laws so ably side-stepped during the past year. The medical profession should study and talk the science of genetics — not only theoretical but practical eugenics should be advocated even to the point of sterilization of the most grievous offenders against society leaving all other functions intact. In conclusion I quote from "Humphrey's Racial Prospect" which is not altogether in accord with the above program at PRES-ENT."

"We are coming to a realization that something more effective than a warning finger must be behind eugenic advice, 'eugenics by compulsion' is that 'something more'. It does not wait upon the absurd expectation that intelligence and cooperation will manifest themselves in quarters where neither exist. Its ideal of complete effectiveness is in putting the reproductive function of the entire community under the calm judgment of authority just as is every other human activity which touches upon social welfare. There is no reason except the obsolete one of custom why the function most vitally concerning the human race should not submit as all lesser functions have submitted to intelligent guidance.

In beginning the segregation of the feeble-minded we have taken the first step toward the full attainment of this ideal. There is a growing recognition of the necessity for cutting off the increase of downright human unfitness. But public indifference to even this first essential in race preservation is evidenced by the segregation of less than one-sixth of the country's obviously feeble-minded. This is not the way for unquestioning acceptance of results which help the individual but hurt the race. Civilization's critical disease is the failure of its best stocks — not the fecundity of its worst — and elimination of unfitness scarcely touches the dis-

ease. But a new meaning can be read into the eugenic ideal. Its complete effectiveness is in putting the reproductive function of the whole community under the calm judgment of authority. That includes the best as well as the worst of us.

BIBLIOGRAPHY

- The Physical Basis of Life—T. H. Huxley.
 The Belfast Address—John Tyndall.
 The Physical Basis of Life—Edmond B. Wilson.
 The Passing of a Great Race—Madison Grant.
 The Races of Europe—Ripley.
 The Direction of Human Evolution—Conklin.
 The Racial Prospect—Humphrey.
 The Development of the Sciences — Yale Uni. Press.

DISCUSSION

C. E. SAYRE, M. D., (Norfolk): We have heard a very able paper. I did not hear all of it, but I heard enough to agree with our essayist.

I believe the time is coming when laws will be passed making it compulsory to sterilize all the unfit — all the mentally deficient — all criminals. Our country is largely being populated by the wrong class of individuals. I think the fit should see that these laws are passed.

A short time ago there came to the Norfolk State Hospital a girl supposed to be pregnant. I asked what step would be taken — if she were to be curetted or not?

They said, "Nothing; they had no authority to abort her, and that she would bear her child if she proved to be pregnant.

A child of an insane parent is better never born. Fortunately this girl did not prove to be pregnant.

I think law should compel the emptying of that uterus, and I believe such a time is coming. All these individuals should be sterilized.

F. B. YOUNG, M. D., (Gering): I have enjoyed the Doctor's paper. We need more papers along those lines. We need more agitation along this line. We need a change of laws, and in this I am drifting onto a touchy subject and one that will possibly bring criticism.

We need a repeal of the law that forbids the dissemination of knowledge of birth control. It amounts simply to this: The more intelligent and higher-class people are not prevented by this law from knowing how to control conception. The lower classes are prevented. The idea of the repeal of this law is simply to permit dissemination of information among the lower and less desirable classes whereby they can benefit — if it is a benefit to the individual: It certainly is a benefit to the community — in the control of conception.

I shall not attempt to discuss the moral side except to say this: All intelligent families know and practice birth control. Apply it to yourselves if you are inclined to question that assertion.

Another thing is the necessity for sterilization of those who have hereditary defects as the Doctor mentioned. In my institutional experience, I saw one woman who had had five illegitimate children.

She would go out of the institution apparently well. In a year or two she would be pregnant, and she would go into the excitement of an imbecile, and come back and stay until her baby was three or four months old, and be discharged. She came through the institution five times. When she went out after I was in charge, she went out sterile. She would not have any more illegitimate babies to become patients of that institution.

Under the law, there is no provision made for that kind of treatment, but an institution superintendent can do a lot of that kind of work if he will lay the facts before the guardians or parents of these mentally defective young people, either men or women. Under modern conditions, it is a comparatively simple operation to stop the procreation of those who are discharged. It is the young imbeciles and morons that need sterilization. It is not to be confined alone to the young women, but the males should be sterilized as effectively, also.

This question of feeble-mindedness and the effect it is having on our civilization is very complicated, and all the various methods that can be applied to its solution should be applied, and applied carefully. If the institutions for the insane and feeble-minded in the United States were run on a different basis, they would in the course of twenty-five or thirty years cease to be custodial institutions, and become an enormous factor for the good of our civilization; because there are many things that could and should be done by them to solve the problems of our civilization.

DR. O. M. MOORE: I would like only to stress the part of this subject that bears upon the feeble-minded. They are in my opinion our greatest present menace and should receive our attention first. A feeble-minded parent seldom, if ever, has normal children. I recall a case from an institution in New Jersey where one woman had eight children by three different husbands. They were all in the same institution with her. I really think this a vital question.

CURETTING IN PUERPERAL INFECTION

Bonnecaze establishes the following indications for curetting post partum. Before the fifth day: When there is rise of temperature and digital examination of the uterus proves insufficient. In many cases an indication arises later, such as disintegrating retained portions of the placenta or persistent haemorrhage. Under such circumstances a systematic curettage must be performed. Its result will be excellent and lasting. It is often possible to demonstrate uterine retention by examination: Large, relaxed uterus, sensitiveness to pressure, haemorrhage, often accompanied by an evil-smelling discharge. Such cases require systematic curettage.

When the uterus is empty, septicaemia must be combatted by other means, in which the doctor has confidence. (*La Presse Medicale*).

THE DIAGNOSTIC VALUE OF PAIN PRODUCED BY LESIONS OF THE INTRACRANIAL STRUCTURES*

J. Jay Keegan, M. D., Omaha, Nebr.

One of the paradoxes of symptomatology is the fact that the brain is entirely insensitive to external painful stimuli. It can be handled, injured and destroyed without the least sensation. Surgery of the brain proper is thus painless. However, there is a central nucleus in each hemisphere of the brain, the thalamus, which acts as a primary center for peripheral painful stimuli. This pain center is under the control or inhibition of the sensory cortex of the corresponding cerebral hemisphere. Organic lesions which interrupt the nerves which enter the lateral part of this nucleus remove the inhibiting influence, and painful stimuli from the opposite half of the body are exaggerated. This is known as the thalamic syndrome. Another exception to the statement that the brain has no sensation is the possible representation of the sympathetic nervous system, with a function in the brain similar to the sympathetic nerves of the abdominal viscera. While not sensitive to external stimuli these nerves may react to internal toxic or metabolic disturbances in a painful manner.

The most important sensory intracranial structure is the dura mater, the outer membrane covering the brain. This membrane is supplied by sensory nerves from the three branches of the trifacial or fifth cranial nerve. Headaches of intracranial origin are largely due to tension or pressure on this membrane. Evidence of this recently was found, following section of the sensory root of the left trifacial nerve for trifacial neuralgia. In this case subsequent headaches occurred only on the opposite side of the head. Extensive brain operations can easily be done under local anaesthesia as the scalp is the only structure that need be anaesthetized. The cranial bones can be trephined and the dura cut without producing pain, but any pressure or tension upon the dura causes pain.

The pain of brain tumors usually is produced by a block in the flow of the cerebrospinal fluid. The ventricles then become distended from the continued secretion of the choroid plexuses, with resultant internal hydrocephalus and generalized increased intracranial pressure. The pain from this pressure is

rarely characteristic or indicative of the location of the tumor. It most often is a dull ache in the frontal or occipital regions, intensified at times to pain of intolerable severity. Continued high grade pressure produces stupor and coma with a lessening of the suffering. Tumors occasionally act in a ball valve manner, suddenly blocking the narrow foramen of Munro leading from the lateral ventricle, or the aqueduct of Sylvius, producing sudden attacks of excruciating headache, often rapidly fatal. A brain tumor which does not block the circulation of the cerebrospinal fluid gives rise to little pain. If the tumor is at the surface of the brain and involves the meninges there may be a corresponding area of hypersensitivity to tapping the skull, or a localized headache. Tumors in the posterior fossa of the skull, of the cerebellum chiefly, often produce localized suboccipital pain, increased by movements of the head forward, this increasing the pressure on the tentorium cerebelli. The pain produced by brain abscess is similar to that of brain tumor. It may be localized when the meninges are involved.

One of the most intense types of head pain is that associated with purulent meningitis. This usually is constant and generalized, with or without intracranial pressure. It probably is due to inflammatory tension within the meninges. Extension into the spinal canal irritates the spinal nerve roots, giving rise to the pain and muscle rigidity in the cervical and back regions. Tuberculous meningitis is less constant in the pain it produces and it is of lesser degree, similar to tuberculous inflammation elsewhere. Syphilitic meningitis causes headache of intense severity, characteristically worse at night. It runs a course of several weeks and disappears or is complicated with hemiplegia.

Aneurysm of the blood vessels of the brain produces a localized throbbing due to the pounding of the aneurysm on the dura, usually at the base. There is no generalized headache and no increased intracranial pressure.

Congestion and oedema of the brain cause generalized headache of moderate severity,

*Read before the Omaha-Douglas County Medical Society, March 11, 1924, part of a symposium on pain.

increased by sneezing, coughing or lowering the head.

Migraine, the common sick-headache familiar to all, is characterized by its unilateral localization and its intense throbbing character. Its cause is unknown but it is thought to be dural in its origin.

Spinal puncture headache, familiar to many, occurs when the cerebrospinal fluid is too rapidly or too completely withdrawn from the brain cavities. It may occur

temporarily during spinal puncture, but characteristically appears shortly after the patient arises following a spinal puncture. It is caused by the continued escape of the spinal fluid through the opening made in the dura by the puncture needle. This fluid does not escape to the exterior but into the epidural space within the spinal canal. The headache is prostrating and is relieved by lying down, keeping the head low. It usually lasts about a week, confines the patient to bed and leaves without permanent effect.

SPOROTRICHOSIS — WITH REPORT OF A CASE

J. F. Gardiner, Stuart, Nebr.

Sporotrichosis holds a particular interest for the practitioners of Nebraska inasmuch as the middle west constitutes the main source of this pathological condition in the United States. Its true incidence in Nebraska cannot be exactly stated as the number of cases so far reported, probably represents only a small percentage of the total aggregate seen by practitioners in this state.

This condition comes under the classification of fungus disease, closely allied to blastomycosis and actinomycosis. Under the same heading of the fungi or molds are such parasitic conditions as pityriasis versicolor, thrush, tropical sprue, favus and ringworm.

Schenck of John Hopkins in 1898 first isolated the sporothrix and established this particular invasion as a definite entity. Later on Beurmann and Gougerot, two European investigators thoroughly studied the disease.

The parasites occur in lesions as oval or cigar shaped spores and grow in cultures as a branching mass of filaments with clusters of oval or spherical spores about the ends of the filaments. The organisms are obligate aerobes and grow on all ordinary culture media.

While the number of cases reported in this country has been comparatively small, it is very common in France and is seen in nearly every quarter of the globe. The lesions are usually subcutaneous but visceral forms have been described. Numerous types of lesions are found. The commonest forms are disseminated nodules which resemble gummata. In other cases there are scattered subcutaneous abscesses which are usually associated with lymphangitis. There is also a papulo-vesicular form which leads to ulceration.

The lesions are chronic in character and simulate the lesions of syphilis or tuberculosis, for which conditions many cases of



sporotrichosis have been mistaken. Nodular lesions have also been found in the bones, in lymph nodes, the lungs and kidneys. The lesions consist of foci of chronic granulation, the tissue containing numerous giant cells which later undergo separation. There is, as a rule, little systemic disturbance associated with the disease. The lesions often heal spontaneously, leaving dense scars, but clear up very rapidly under iodine therapy.

CASE HISTORY:

Mrs. H. T. was seen April 6, with a chief complaint of having several boils on her right forearm for which she had tried numerous home remedies, without avail.

Her history in detail was that the primary lesion

began last November as a small papule on the lower anterior surface of the right forearm. This soon enlarged to the size of a cherry and could be felt as a hard painless nodule under the skin. Within a month three similar nodules appeared along the course of the lymphatics and by the middle of January the nodules had reached seven in number, scattered along the course of the lymphatics on the flexor surface of the right forearm. During the latter part of January and February the nodules broke down forming subcutaneous abscesses which were still discharging a thick yellow secretion when seen by us.

On examination the sores presented ulcerated areas the size of a dime to a quarter with indurated edges and grey granulating bases. The skin surrounding the lesions was red and somewhat tender to touch. The axillary glands were not painful or swollen, and at no time had she any systemic disturbances. Under iodide therapy beginning with twenty grains of potassium iodide three times a day and running it up to ninety grains t. i. d. which she is taking at the present time, and the use of Lugol's solution locally, the lesions have practically cleared up, leaving dense fibrous scars.

We were fortunate on finding the organisms on a direct smear, which was made with the application of a 5% sodium hydroxide solution. Staining with a weak solution of carbol-fuchsin often gives good results. Usually cultures are necessary. Glucose agar in four or five days shows small white colonies which soon turn to a dark leathery appearance. Using a gram stain, the organisms from a culture usually stain deeply.

Our patient could give no etiologic cause, as is the case with most of these patients. Occasionally a history will be had of traumatizing an extremity on an article containing mold. This condition is usually one of active adult life, with predominance in male sex. The history usually given is as in this case, with the formation of painless nodules which break down and ulcerate. The nodules vary in size from a pea to a cherry and are freely movable under the skin, somewhat hard to the touch and average about seven in number.

Very often the diagnosis of these cases is not cleared up until a bacteriologic examination has been made. Curetting and treating this condition other than by iodide therapy is of no avail usually and only aggravates the disease. The essentials of a correct diagnosis are: The clinical appearance of the lesions; the course of the disease, and the bacteriologic demonstration of the causative organism.

The slowness of the disease's progress is probably due to the formation of immune bodies in the blood.

In summing up, I would like to add that lesions of a nodular character occurring on the body which do not tend to heal up under ordinary surgical methods, should be investigated for the presence of fungi.

THE USE AND ABUSE OF WEIGHT-HEIGHT-AGE TABLES AS INDEXES OF HEALTH AND NUTRITION

When physicians, nutrition workers and physical training teachers are not particularly prepared for detailed, careful measur-

ing, Bird T. Baldwin, Iowa City (Journal A. M. A., Jan. 5, 1924), would place this phase of the health work under the direction of the science or mathematics department of the school. Every school in America should require height measurements on the pupils twice each year, and the weight measurements at least every two or three months. Underweight children should be weighed monthly or biweekly. Teachers and health workers should understand that the weight tables supplement and contribute directly to physical examinations. They are not supposed to take the place of a medical examination. They are guiding instruments, not finalities. Normal growth in weight and height is probably the best single index of good health and good nutrition during childhood. The nature of the physician's physical examination is dependent on the location of the community and the age of the children as well as on the criteria of good health. For example, in some communities, glandular disturbances, especially goiter, are prevalent for high school children, while in other communities adenoids and enlarged tonsils are found among a higher percentage of younger children. The physical examination should include at least a careful examination for the after-effects of the important recent diseases and for the condition of glands, eyes, ears, heart, lungs, muscles, bone and skin. Some of these conditions affect growth more seriously than others, some apparently not at all. A special dental examination should be included with reference to the eruption of teeth as an index of development, their care and physical condition, caries, abscesses and occlusions. It is not sufficient to have a picture of the child's physical condition, but its physical capacity and output of energy must also be measured and evaluated. The health and nutrition problem is one of community of effort and exchange of data on the part of all health and educational agencies working with the child. Health education is an integral part of all first class public school systems. Physical measurements and physical examinations are an essential part of health education. Health ratings are just beginning to be considered a potent factor in school promotions. In a very few years, every good school system will include health education ratings on the same basis on which they now include mental examinations and educational achievement ratings in arithmetic or language.

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THE DES MOINES, MISSOURI VALLEY MEETING.

Two hundred medical men, mostly Iowans, although Nebraska and Missouri also were ably represented, attended the thirty-seventh annual meeting of the Missouri Valley Medical Society at the Hotel Ft. Des Moines, Des Moines, September 17-19 under the presidency of Dr. H. J. Lehnhoff, Lincoln.

The first thing to impress the visitor was that the local committees were "on the job." The sessions opened promptly. Fifteen representative members of the Des Moines profession gave dry clinics during the three mornings of the meeting. Each succeeding meeting in which dry clinics are featured affords additional cumulative evidence of the superior educational value and popularity of the dry clinic plan. The speakers were given undivided attention as the quality of the efforts deserved. To touch on every good feature of the scientific sessions would be to write the minutes of the meeting.

Nebraska's principal contribution, the symposium on "Primary and Complemental Jejunostomy in the Treatment of Acute Ileus," was one of the outstanding features of the program and was very well received. Goiter operations, in moving pictures, was presented by Dr. E. P. Sloan, Bloomington, Ill. Radium and x-ray treatment of malignant disease was highly praised and roundly condemned by various speakers.

Touching specifically a few of the everyday problems of the general practitioner, Dr. J. F. Auner, Des Moines, recommended very highly for weeping infantile eczema, sulphichthyolate of soda, 15 gr. to an ounce of water to be applied with a soft sponge. The same clinician spoke of eczema as an anaphylactic phenomenon—an allergy of the skin; Dr. L. W. Hill, Des Moines, gave his formula for lactic acid milk—Boil one quart of milk for five minutes, remove scum, add drop by drop 2 drams U. S. P. lactic acid and two drams karo corn syrup (which is dextrose); Dr. T. A. Burcham, Des Moines, called attention to the fact that the x-ray may not show bone infection the first ten days; Dr. W. L. Bierring, Des Moines, presented some new and advanced work in the treatment of nephritis, stressing among other things, calcium, (lactophosphate of lime) therapy.

Altogether the meeting was a very profitable one.

Dr. J. W. Martin, Des Moines, was elected president, Dr. A. P. Overgaard, Omaha, and Dr. G. H. Hoxie, Kansas City, vice presidents and Drs. Charles Wood Fassett and O. C. Gebhart, were reelected secretary and treasurer, respectively. Council Bluffs was selected as the next meeting place.

THE JOURNAL, THE READER, THE EDITOR

The editor has heretofore said that this is your Journal; that it is just as good as you help make it and that you must help to make it better. Items of interest, reports of society meetings, timely articles, case reports, etc., are always appreciated.

We occasionally publish a sketch with half-tone of some outstanding medical character (see this issue) in this state or who has resided in this state. He may or he may not have been particularly active in the state medical association. The history of medicine is more than the history of medical organization, outstanding as that is. Even with a wide acquaintance of medical men and women in this state, the editor does not know everybody or all the conditions surrounding medical men and women in parts of the state remote from his own habitation. Suggestions of and about physicians who it is thought should be given space are solicited and heartily welcomed.

THE INFLUENCE OF PREVENTIVE MEDICINE UPON THE PRACTICE OF MEDICINE.

During the first twenty years of my career while in general practice, each fall there came under my care a number of cases of typhoid fever, both while in practice in a village in Illinois and for some years after coming to Omaha. For two or three months each fall, the treatment of this disease embraced the greater volume of my business. Owing to preventive medicine typhoid fever is nearly eliminated.

During those years the writer saw a number of cases of diphtheria each winter with a high mortality. Now, owing to the use of antitoxin the mortality is greatly reduced and the duration lessened. By the aid of the Schick test and use of toxin-antitoxin in susceptible children, diphtheria is gradually being eliminated. The Dick skin test for susceptibility to scarlet fever gives promise of lessening the prevalence of that dread disease. These are merely illustrations of the benefits of preventive medicine, yet in its infancy. It is probable that in civilized countries all contagious diseases will be ultimately eliminated. All of this and more is the result of the application of knowledge gained by medical science applied to the problem of public health. Now, owing to rapid transportation and intercommunication between peoples and nations, the very foundation of civilization would be imperiled were it not for the enforcement of preventive quarantine measures only possible as the result of the advancement of medical science.

The young graduate must spend eleven years after the completion of the grade school in study, also a large outlay of money. Again, the expenses of the practitioner necessary to maintain himself are greater than in former years.

Owing to the lessening of the prevalence of contagious disease; the competition of irregular cults, many of whom have scant preparation; and the better education of the lay public in questions of diet, hygiene, etc., the volume of business in any community is necessarily limited.

All of this leads to the question "What of the future of the practice of medicine? What is the outlook of the young men and women now on the threshold?"

It seems to the writer there is a brighter side to the picture, namely, the care of cur

patients in preventing disease and the early recognition of morbid conditions. I may illustrate my meaning from personal experience. Pediatrics is internal medicine with an age limit. In going over my cases I find that more than three-fourths of the infants and children coming under my observation are not suffering from any contagious or infectious disease.

They come for advice as to diet, digestive disturbances, colds, nervous symptoms, etc., conditions amenable to proper care and treatment. For these and other symptoms parents with natural interest in the welfare of their children, seek advice as to their proper care, feeding and treatment. The general knowledge now widely disseminated in current literature leads them to consult physicians earlier than formerly. This applies with equal force to adults. These cases are most satisfactory because they show good results. Appreciation of the public is more dependent upon results, than upon diagnosis. In the future people more and more of all ages will come to consult physicians without waiting for serious symptoms. In this the profession is aided by the propaganda of life insurance companies and cancer societies. A general physical examination can be given by any competent physician. This should include weighing, measuring, inspection, palpation, oscultation, examination of the urine, blood pressure, nose, throat, etc. In this way almost any abnormal condition will be discovered. At least a physician will know if further investigation by x-ray, etc., is necessary. Such an examination can be made in any modernly equipped office. People are willing to pay for the time of the physician in making such an investigation and to cooperate in carrying out a definite line of treatment. I leave it to the judgment of my readers if we do not often say to our patients, "Oh! go along, you look all right." Often they do go along and consult others or drift into the hands of some of the cults, where they receive "adjustments" and other treatments and for which they remunerate often liberally. The writer is satisfied that when physicians in general practice pursue the policy of more personal attention and careful examination most of their patients will come to them first before consulting specialists. Furthermore, that in the majority of cases, the general practitioner will be capable of giving

the advice and treatment that may be necessary; or at least care for cases after consultation. I am satisfied that almost all physicians are honest and that when they discover a condition that requires special treatment beyond that which they feel they can give, or hospitalization they will frankly so advise their patients. In this way the physician keeps in touch with his patient. At the present time, it is unfortunately true that many persons without consulting their medical adviser, drift off to specialists in other towns or cities. There must be a reason for this. It is not unkind or untruthful to say that the chief complaint made by a great many is that their physician did not seem interested in the case, or did not examine them. Specialists as a rule are glad to cooperate with the family physician, indeed, it is to the mutual benefit of consultant physician and patient.

The usefulness and necessity of the general practitioner both in the city and country has not ceased to exist. Specialism has been over done in the past twenty years but there is yet room and necessity for the family doctor and the specialist, but the individual in general practice must be permitted at least a reasonable income. The general practitioner, if he is wise, will again come into his own. He should be the leading citizen in his community, his opinion should be respected and he will be enabled to earn a sufficient income to maintain himself and family in comfort, and to leave a modest competence for his children.

—H. M. McClanahan.

A UNIFORM PRACTICE ACT.

Before the annual meeting of the Nebraska State Medical association in Omaha last May the following resolution was presented and by motion was referred to the Committee on Public Policy and Legislation:

"Resolved that we welcome as co-workers in the healing art all those who are worthy and well qualified and are actuated by the motive of service to mankind and as a safeguard to such in pursuit of their calling as well as the adequate protection of the public, we urge the enactment, by the next session of the state legislature, of a uniform practice act, which shall establish a minimum educational requirement for all practitioners of healing regardless of the system of treatment employed."

The motive behind the resolution is the attempt to bring order out of the present chaos in the state's administration of medical practice in its largest sense.

The existence of multiple standards for the various schools of healing though technically fair, does in reality amount to class legislation.

The qualification to practice the art of healing rests first on the ability to recognize disease and this knowledge must be required of all if the state is to make its health and quarantine regulations effective.

In no sense could such a measure as the one contemplated be called a special privilege act for in reality it would eliminate special privilege.

I believe that the state association should draft a model law specifying the subjects that enter into a proper understanding of diagnosis, sanitation and hygiene as being required of all who would practice healing irrespective of the mode of treatment employed, and that this should be used first for the instruction and consideration of the physicians themselves.

—F. W. Buckley.

ACUTE POSTOPERATIVE DILATATION OF THE STOMACH.

Acute postoperative dilatation of the stomach, sudden in onset, progressively and rapidly prostrating, is almost certainly fatal if not properly treated. The antecedent surgery is usually, but not always, a laparotomy. The patient has often, but not necessarily, been etherized. There is sometimes, but not in every case, a history of previous gastric disturbance. Exceptionally it may develop on the operating table before the abdomen can be closed. More often it begins a few hours after the patient returns to bed. It may develop fourteen to twenty-one days later.

There is complaint of epigastric distress with more or less gaseous eructation. Soon there appears a rapidly increasing upper abdominal distention, chiefly in the left hypochondrium. With this there is ineffective retching and often regurgitant vomiting. In some cases, if the patient be turned on the left side, the greenish black stomach content seems to overflow much in the same manner as does the over-distended and incontinent urinary bladder. The amount of this material brought up is sometimes enormous. Always it is far in excess of the fluids taken by mouth. But no relief of the nausea or of the distention occurs. The thirst is agonizing. If the stomach tube be passed rather

early there is an explosive escape of odorless gas. Some fluid is evacuated and marked symptomatic relief is obtained. In more fully developed cases the amount of fluid evacuated is beyond all belief.

But if the condition is unrecognized and if no adequate treatment is instituted the distention seems to involve the whole abdomen, the distress increases, the patient clamors for water to assuage the intolerable thirst. The shrunken face, the dry skin, the parched mucous membranes and the scanty or suppressed urinary output testify to the acute dehydration present. Mounting pulse, quickening respiration, cooling extremities and darkening mucous surfaces signal the approaching end.

The diagnosis is not difficult. It should not be confused with the common and relatively benign postanesthetic nausea which shows no distention and which responds quickly to lavage or gastric sedatives. It must not be mistaken for the generalized distention of acute diffuse peritonitis or of paralytic ileus which can sometimes be relieved by stupes or enemata. The vomitus is never feculent and the distention does not disappear despite free bowel movement.

The mortality remains distressingly high at thirty-five per cent. It has been reduced to this figure by early use of the stomach tube or the knee-chest position, preferably the first, sometimes both, and rarely the latter alone. The tube must be advanced well in to reach the bottom of the enormously distended viscus. If its repeated use alone does not suffice, the exigencies of the recently completed surgical procedure permitting, the knee-chest position may be employed. Sometimes the latter alone is sufficient.

At present there can be speculation only as to the cause of this condition. Early opinion held to the belief that it represented a true obstruction. But the vigorous rhythmic movement and hyperperistalsis seen in other mechanical alimentary obstructions have rarely been observed. The theory of compression of the duodenum by traction on the mesentery of the small bowel is not convincing. It is entirely untenable to the surgeon who, with his patient in the Trendelenburg position, has observed the stomach dilate until it reached the iliac crest in less than one minute. That a secondary obstruction

may develop from downward pressure of the distended stomach on the mesenteric root is conceivable. But that obstruction is the primary cause of a condition which cannot be relieved by gastro-enterostomy (and which, indeed, may complicate it) but which responds to gastric lavage is not probable. Why the knee-chest position relieves some cases must remain unexplained.

As far back as 1859 Brinton advanced the theory of gastric paralysis to explain this condition. Only on the basis of disturbed nervous mechanism can the loss of muscle tone, the absence of peristalsis, and the extreme and rapid dilatation of the stomach be explained. This also explains the enormous fluid accumulation and the extreme dehydration as due to hypersecretion of the gastric mucosa. Experiments have proven that this is not regurgitated bowel content. At the present time it cannot be said that this theory offers explanation of the origin of the gas in the stomach. Nor does analysis of the gas offer much aid in the solution of the problem. Almost surely the basis of the gas is atmospheric air but that the distention is due solely to "swallowing," "gulping" or "inspiring" air into the stomach seems unreasonable. Most certainly this does not explain those cases occurring under deep anesthesia for swallowing is, in part, a volitional act and is abolished under complete narcosis.

Whether the condition represents a disturbance of vagus activity or of sympathetic inhibition, an upset of the finely adjusted parasympathetic autonomic balance—or whether it is a dysfunction of the neuromyogenic apparatus, Auerbach's plexus—is a matter of academic interest. To theorize on the etiology and speculate on the pathology of this condition is the privilege of the clinical surgeon. To recognize the symptomatology and to institute treatment is his duty.

—J. W. Duncan.

EDITORIAL PARAGRAPHS

Scientific medicine recently within a week lost by death two of its ablest men. Dr. B. W. Sippy, Chicago, of "Sippy treatment" fame died August 15th of diabetes and complications aged 58. Dr. G. A. Piersol, Philadelphia, the anatomist died Aug. 7th after a protracted illness aged 68. Both gave the best that was in them to the advancement

of medical science, and made inerasable places for themselves in medical history.

The amount paid for the Louisiana Purchase, \$3,000,000 is about equal to the value of the crop produced in an average eastern Nebraska county annually.

"Childish phantasies" has been overworked lately, in print and pictures. A naturally normal childhood condition—who is there that does not recall the phantasies of his early childhood? Playing bear, playing Indian, playing war, playing railroad builder, playing policeman is a normal part of male child life.

The mutual interrelation of the doctor and the barber: When you absentmindedly start to walk out of the barber shop you are promptly reminded by that functionary that you have forgotten something. Rather sheepishly you produce the quarter and the incident is closed. Many barbers always forget the doctor, they are blind to monthly statements and deaf to vocal reminders.

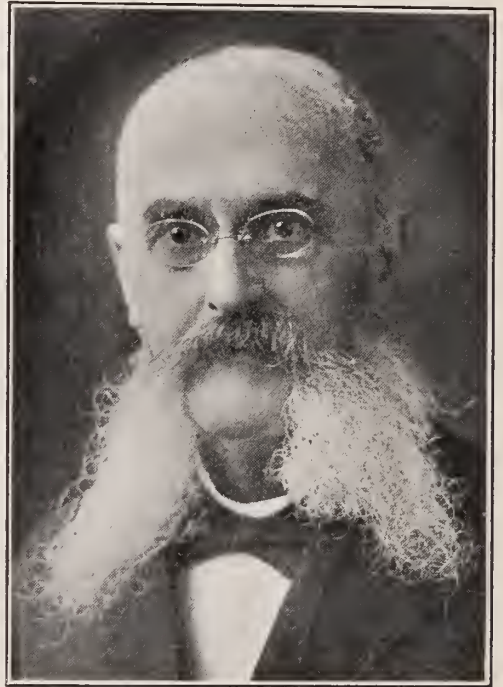
It is stated that there are one million drug addicts in the United States. A study by Dr. Carleton Simon, Special Police Commissioner of New York City, indicates that less than two per cent of drug addicts arrested in New York were able to trace their drug addiction to having been acquired as a result of medical or surgical treatment. Ninety-eight per cent state frankly that the addiction was due either to bad environment, vicious influences, or criminal associations.

Dr. Sun-Yat-Sen, first president of the Republic of China, was famous as a surgeon before he became a political power.

The local press does not often go into ecstasies over the doctor and his unceasing labor. It is gratifying, therefore, to note that a Nebraska lay paper (The Plattsmouth Journal) has given a very fine tribute to a country doctor who has given the best thirty years of his life to a country community. The untiring physician gives himself freely to the community in which he lives and labors without thought of popular eclat. The results of his labors as shown in recovery of patients from alarming illnesses, usually is ample satisfaction.

A REPRESENTATIVE OF A RACE OF MEDICAL MEN—DR. T. D. THOMPSON.

Dr. T. D. Thompson, West Point, Neb., was born in Reading, Penn., in 1849, graduated from the University of Pennsylvania in 1873, located at West Point, in 1874 returned to his ancestral home for the year 1875,



DR. T. D. THOMPSON

and located permanently at West Point in 1876. Dr. Thompson was married in 1874 to Elizabeth Yoder and nine children born to this union attained manhood and womanhood. The golden wedding anniversary was celebrated June 22nd this year with eight living children present. Four of the sons entered the medical profession: Dr. Warren Thompson (Creighton Medical college, 1909, Rush Medical college, 1914), Omaha; Dr. Kimball E. Thompson, deceased, (Creighton Medical college, 1908); Dr. Richard Y. Thompson, (Cornell Medical college, 1914), New York City; Dr. Chester Thompson, (Harvard Medical school, 1922), Omaha.

Dr. Levi H. Thompson, father of the subject of this sketch, was a graduate of Jefferson Medical college, practiced in Reading 49 years and died in 1896.

The subject of this sketch had three brothers, graduates of Jefferson Medical college. Two died some years ago; the youngest brother, Dr. Lewis Thompson is now in practice in Reading.

Surely the history of such an outstanding medical family is worthy of brief record.

Dr. Thompson's loyalty to his patients was never questioned during his long career. His interest in young men aspiring to medicine as a career is well known to this editor who was one of the beneficiaries. Dr. Thompson is now, and has been for several years, president of the Cuming County Medical society.

A NEW CHAIR AT JEFFERSON MEDICAL COLLEGE.

In recognition of the far reaching developments of bronchoscopy in the diagnosis and treatment of diseases of the lungs and of esophagoscopy and gastroscopy in the diagnosis and treatment of diseases of the esophagus and stomach, the Board of Trustees and Faculty of The Jefferson Medical College, have created a new Chair to be known as the Department of Bronchoscopy and Esophagoscopy. Dr. Chevalier Jackson, formerly Professor of Laryngology in The Jefferson, has been elected to the Professorship of the new Department. Dr. Fielding O. Lewis has been elected to fill the Chair of Laryngology vacated by Dr. Jackson.

ALUMNI REUNION, UNIVERSITY MEDICAL COLLEGE, KANSAS CITY.

Alumni of The University Medical College, Kansas City, Missouri, will hold a reunion banquet, Wednesday, October 15, 1924, 6:30 P. M. in the Banquet room of the Kansas City Athletic Club, 11th & Baltimore, Kansas City, Missouri.

During the noon hour of the same day the various classes from 1882 to 1913 inclusive will hold individual class reunion luncheons.

The reunion banquet is a part of the program of the Kansas City Clinical Society, which will convene in Convention Hall, Kansas City, Missouri, October 13-18, 1924.

RED CROSS ROLL CALL.

The American National Red Cross holds its annual nation-wide roll call from Armistice Day, November 11th, through Thanksgiving Day, November 27th. In this period it seeks to re-enlist its present membership and to enroll new members for 1925. The Red Cross "makes its appeal for support directly to the conscience of mankind." Every one is invited to join through the local Chapter or Branch.

ELKHORN VALLEY AND FOURTH COUNCILOR DISTRICT MEDICAL SOCIETIES JOINT MEETING, MADISON, NEBR., OCTOBER 7, 1924.

The joint meeting of the above organizations will be held at the City Hall, Madison, October 7th, beginning at 10 a. m.

Tentative program furnished the Journal follows: "Gastric Ulcer," Dr. A. C. Stokes, Omaha; "Brain Surgery," Dr. K. S. J. Hohlen, Lincoln; "Puerperal Infection," Dr. Palmer Findley, Omaha; "Some phases of Sinus Infection," Dr. Fred Bailey, Norfolk; "Celluloid Inserts in Intra-Nasal Surgery," Dr. L. L. Nelson, Norfolk.

Midday luncheon will be served in the basement of the Presbyterian Church by the Ladies Aid Society at 12:30 sharp.

Good hotel accommodations. Golfists desiring to play an early morning game will be welcomed by the Madison Golf Club.

THE SOCIETIES.

The Custer County Medical Society picnic which was to have been held in a grove on the Middle Loup river, owing to rainy weather was held in the Broken Bow City Hall. Dr. E. C. Henry, Omaha, gave an address on "Infections."

On August 26, the Crete physicians gave a dinner to the Saline County Medical Society. Dr. Geo. W. Covey, Lincoln, gave a paper on "Digitalis" and a clinic on heart lesions, both of which were enjoyed and thoroughly appreciated by the attending doctors.

The Northeast Nebraska Medical Society met at Wayne the last of August, about twenty physicians being present. The following subjects were considered: "Some Aspects of Medical Advertising," by Dr. Cook; "Intestinal Obstruction," by Dr. R. Q. Rowse of Sioux City; "Acute Laryngitis," by Dr. Naftziger of Sioux City. General Discussion followed each paper, and altogether developed valuable information.

An X-Ray And Physio-Therapy Clinic, the first of ten monthly clinics planned, was given in Omaha September 2nd with an attendance of about one hundred physicians from four adjoining states. Outside talent present was Dr. Gustav Kolischer, Chicago, and Major Nelson A. Myll, Denver. Dr. J. H. Lowery, Neola, Iowa, Dr. John G. Walsh, Woodbine, Iowa, and Drs. Roy Fouts, D. T. Quigley, E. C. Henry, A. F. Tyler, Omaha, were on the program.

The Scotts Bluff County Medical Society met in regular monthly meeting Sept. 11, at the Lincoln Hotel, Scottsbluff. Dr. W. C. Harvey, Scottsbluff, read a paper on "Interpretation of Blood Pressure"; Dr. W. P. Hodnett, Scottsbluff, "Infection of Paranasal Sinuses." A Medical Propaganda Committee to investigate methods of presenting the true status of medical science to the laity, was appointed as follows: Drs. J. N. Stoops, F. B. Young, and C. R. Watson.

HUMAN INTEREST TALES.

Dr. F. J. Kalal has located at Wilber.

Dr. F. D. Coleman has moved to Lincoln from Ulysses.

Dr. A. L. Cooper has moved from Morrill to Scottsbluff.

Dr. I. H. Boehr, Henderson, has decided to locate at Tecumseh.

Dr. and Mrs. C. H. Bailard, Omaha, summered at Three Rivers, Mich.

Dr. A. D. Dunn, Omaha, spent a week in Salt Lake City in August.

A new addition to St. Mary's hospital, Columbus, was dedicated last month.

Dr. Andrew Harvey, Fremont, has been reemployed as school physician.

Dr. and Mrs. C. H. Arnold, Lincoln, motored through Minnesota in August.

Dr. Chas. O'Neill Rich, Omaha, spent some time at Lake Okoboji during August.

Dr. A. C. Armitage, formerly a resident of Culbertson, has located at Haigler.

Dr. and Mrs. Rodney Bliss, Omaha, spent some time at Lake Okoboji in August.

Dr. R. G. Proctor of Iowa has become associated with Dr. A. E. Gadbois, Norfolk.

Dr. C. C. Tomlison and family, Omaha, motored to Wyoming and Colorado in August.

Dr. and Mrs. C. P. Fordyce, Falls City, spent their vacation in Minnesota and Canada.

Dr. and Mrs. E. A. Watson, Grand Island, had a two weeks' trip through the eastern states.

Dr. C. H. Shhets and family, Cozad, have returned from an extended trip throughout the east.

Dr. D. O. Hughes, formerly of Omaha, has located at Peru, succeeding Dr. D. D. Stonecypher.

The marriage of Dr. John A. Griffin and Miss Mary Katchum, Omaha, took place September 2nd.

Dr. G. F. Ewing, has located at Wood Lake, occupying the offices formerly occupied by Dr. J. M. Tische.

Dr. Horace Campbell, interne at Lakeside hospital, Cleveland, visited his parents in Omaha last month.

Dr. W. W. Schmitz, recently from Philadelphia, has become associated with Dr. Chas. McMartin, Omaha.

Dr. A. E. Wade, Lexington, has sold his interests and will locate on the northwest coast, probably at Seattle.

Dr. Oliver J. Fay, Des Moines, spoke before the Omaha Surgical Club Sept. 4, on the welfare of the patient.

Dr. and Mrs. C. F. Kirkpatrick, Ashland, took a three-weeks' motor trip to northern Minnesota in August.

Dr. W. H. Powell and family, Minden, took a vacation tour through parts of the east in July and August.

Dr. J. C. Moore, former well known Omahan, for several years resident of Los Angeles, has returned to Omaha.

Dr. A. L. Miller, Kimball, visited "home folks" at Plainview on his way to Rochester, Minn., to take special work.

Dr. and Mrs. S. Morgulis, Omaha have returned from Woods Holl, Mass., where they were located during the summer.

Dr. H. Gifford has been designated professor emeritus of ophthalmology of the Nebraska University College of Medicine.

Dr. O. F. Lang, Falls City, met with a serious but not alarming accident in September when his car slid into a ditch stunning him.

Whether the accidental amputation of the uvula in doing a tonsillectomy is worth \$15,000 is to be determined by the Omaha courts.

Dr. Ray S. Wycoff, Indianola, Iowa, recently returned from medical missionary work in Porto Rico, has located in Lexington, succeeding Dr. A. E. Wade.

Dr. A. M. Sonneland, Norfolk, while on a trip through Minnesota, contracted pneumonia and was a patient at St. Mary's hospital, Minneapolis, several weeks.

An epidemic of malpractice suits has broken out in Nebraska. This time it is another Omaha doctor and the lacerated feelings may be healed by a plaster of \$10,000.

St. Francis hospital, Grand Island, is to receive \$30,000 from the estate of Edward G. Raymers, who recently dropped dead in the harvest field on his farm near Marquette.

Dr. W. L. Wilmoth, for a number of years in practice at Pawnee City has moved to Fairview, Kan. Dr. W. G. Attwood, Fairview, Kan., and Dr. Wilmoth traded properties.

Dr. E. C. Kiech, whose parental home is Springfield, Neb., has returned from six months' post graduate work in Berlin and Vienna. He expects to locate at Cedar Rapids, Iowa.

"Dr." C. A. Flippin, somewhat notorious character at Grand Island for a number of years, pleaded guilty to serious criminal charges, was fined \$400 and agreed to leave the state of Nebraska.

Dr. James E. Woodward, Lincoln, left early in September for Montreal where he attended the meeting of the American Academy of Ophthalmology after which he expected to attend clinics at Harvard and at the University of Pennsylvania.

A dainty little card bedecked with pink ribbon announces the arrival at Hollywood Hospital, Hollywood, Calif., to Mr. and Mrs. H. L. Hohl (Dr. Elizabeth Mason-Hohl), McCook, Neb., of Harrison Mason Hohl, August 12, 1924, weight 8½ pounds. The entire profession congratulates and will adopt the newcomer into the fraternity.

A birthday surprise party was given Dr. W. A. Schreck of Bertrand, on his sixtieth birthday. Thirty admiring friends partook of a cafeteria luncheon. The doctor extinguished the sixty candles with one breath and carved the birthday cake so that each one got a piece, as befitted a real doctor. A substantial present was given the good doctor, speeches were indulged in and a pleasant evening spent. Dr. Schreck has served the community for thirty years.

NECROLOGICAL.

Dr. S. F. Ashby, Fairmont, Neb.; Hahnemann Medical College, Chicago, 1885; practitioner and public spirited citizen of Fairmont since 1885; head physician of the Modern Woodmen for this district for a number of years beginning in 1897; sometime member of the Nebraska State Board of Health; died, Sept. 2nd., aged 60 years. Interment at Mt. Carroll, Ill. A son, John Ashby, is a student at Rush Medical college.

Dr. John F. Spealman, Lincoln; Lincoln Medical College, 1903; in practice at Lincoln 21 years; city physician and superintendent of the city health department between 1909 and 1915; during the World War he was overseas nearly two years with the rank of Major in charge of the 166th Field hospital; died after an illness of 9 months from a kidney affection, aged 47 years.

Dr. Philip H. Metz, Oshkosh, Neb.; Omaha Medical College, 1892; for 25 years a practitioner at Humphrey, later at Omaha and Archer, was found dead on his office couch, aged about 52 years.

Dr. J. S. Wainwright, Giltner, Neb.; Nebraska University College of Medicine, 1901; was found dead on his bed September 11th, aged 45 years.

Dr. Casper Wegmann, pioneer physician of Blue Hill where he had resided about forty years, dropped dead while attending a confinement case, aged about 80 years.

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CONTENTS

Page	Page
Acute Head Injuries, J. W. Duncan, M. D., F. A. C. S.-----	417
Hospital Standardization in Its Applica- tion, Edmund G. Zimmerer, M. D.-----	429
Report of Effect of Operation on Insur- ance Risk, A. C. Stokes, M. D.-----	432
Post-Operative Care, L. M. Stearns, M. D.-----	436
Roentgen Findings in Mediastinal Dis- eases, C. H. Ballard, M. D.-----	438
Intracranial Pressure, B. F. Williams, M. D.-----	440
Pneumonia in Children, Floyd Clark, M. D., F. A. C. P.-----	443
Industrial Bone and Joint Disabilities, Czar C. Johnson, M. D., F. A. C. S.-----	445
Erysipelatous Necrosis of the Eye Lids, H. Gifford, M. D.-----	447
EDITORIALS—	
The Red Cross County Nurse in Her Proper Place -----	450
The Cancer Campaign of 1923-24-----	450
The Department of Public Welfare-----	451
Improving the Race-----	451
Controlled Diaphragmatic Breathing in the Treatment of Pulmonary Tuberculosis -----	452
Editorial Paragraphs -----	453
Forthcoming Examinations for Licensure	454
Nebraska University, College of Medicine Appointments -----	454
The Societies -----	454
Human Interest Tales-----	455
Necrological -----	456

ACUTE HEAD INJURIES*

J. W. Duncan, M. D., F. A. C. S., Omaha, Nebr.
(Department of Surgery, Creighton University College of Medicine, Omaha.)

The great increase in the use of motor driven vehicles has made head injuries one of the most important parts of emergency surgery.

In three New York hospitals in 1910 the mortality rate averaged fifty per cent and in one thousand consecutive cases in the Cook County hospital in Chicago the mortality was fifty-three per cent. These figures represent hospital mortality only and no small number of head injury cases die of their injuries before they can be removed to a hospital. This fact appreciably increases the mortality above indicated.

This discussion deals with those cases of acute trauma to the head with greater or

lesser degree of brain injury and which are usually, but not always, accompanied by a basal or linear vault fracture. Depressed vault fractures or birth head injuries will not be considered.

It is a matter of common observation that those conditions holding high mortality develop extremes of treatment which are apt to be either meddlesome or nihilistic. This obtains in the treatment of head injuries. The interventionist subjects every cranio-cerebral traumatism, of however small degree, to spinal puncture or operation. The abstentionist concedes no value to any measure and neglects treatment until the patient is moribund. Any trauma to the head sufficient to cause even a very short period of unconsciousness or a skull fracture has

*Read before the annual meeting of the Nebraska State Medical Association, Omaha, May 13-15, 1924.

gravely disturbed and perhaps permanently injured a highly specialized and vitally important body tissue. All of these cases demand the most careful observation and some active form of treatment, though only about twenty-five per cent of them, in my opinion, require surgical intervention.

A very prominent surgeon at one time said that he would rather lose his life than suffer a skull trauma which resulted in a loss of consciousness. I doubt if this was a well considered statement and whether he would abide by it if the alternative were presented to him. But it served its purpose which was to impress his listeners with the seriousness of head injuries.

These facts I believe justify consideration of the opinions I am about to express which are founded on a large number of acute head injuries seen in the last five or six years.

ETIOLOGY

The manner in which the injury is sustained and the apparent degree of trauma suffered by the skull seems to me to be of comparatively little importance. I have seen patients suffer nothing more than a mild headache from a blow on the head that would seem enough to "fell an ox." I have seen other patients die within thirty minutes or one hour from what would appear to have been a very minor trauma. I have a man now under observation who was struck on the head with an ax, the injury penetrating the external table and going very nearly through the internal table of the skull. He never lost consciousness. I saw on one occasion a woman who fell to the pavement and suffered a head injury as she alighted from a moving street car. She was caught by her husband as she was falling and struck her head only lightly on the pavement. She died within thirty minutes from a massive intracranial hemorrhage. I have seen a few cases of basal skull fractures in which witnesses declared that no direct trauma was sustained to the skull but merely a sudden impact of the atlas on the occipital bone through the column, as often happens when a person is thrown suddenly and forcibly on the buttocks. Concussion with loss of consciousness, but no skull fracture, not uncommonly arises from a general "shakeup" of the body

unaccompanied by any blow upon the cranium.

That the trauma need not be direct or proximate is proven by deaths among soldiers from the nearby explosion of large shells with a sudden rarefaction and condensation of the atmosphere. The exact manner in which these deaths are brought about is not clear but they seem to be due to a brain injury of some kind. Autopsy often showed no pathologic-anatomic findings or small petechial subcortical hemorrhages such as are seen in some types of head injuries.

I do not believe a sharp or cutting instrument inflicts nearly as much cranial or cerebral injury as a blunt or rather large one with a quickly delivered impact. The place at which the trauma is received upon the scalp makes but little difference as to the degree of brain injury. Fracture by contre-coup, i. e., a fracture on the side opposite from which the blow is delivered is very rare, if it exists at all. There do often occur, however, brain injuries by contre-coup and one will find the left middle meningeal artery ruptured from a blow on the right side of the head and vice-versa. Such injuries are usually sustained by a blow while the head is in motion.

PATHOLOGY

The pathological changes that take place in the brain which has been acutely jarred or shaken within its rigid bony capsule are not well defined. Various classifications have been made but to my mind the terminology describing different types of acute traumatic brain pathology such as concussion, contusion, laceration, etc., represent the same general pathologic picture and differ only in degree or severity. To anyone who has watched a patient with the gradual merging of the picture of one type into another, each with a common background of history and major symptomatology the conclusion cannot be otherwise.

The mildest degree of damage is done in those cases that are classed as concussion. The pathology of concussion is extremely obscure and attempts made to produce it experimentally have failed. This is, perhaps, due to the anatomical peculiarities in the brain of animals or it may be a result of the higher development of function of the brain in man. It has been said that the

condition is merely one of a suddenly developing and temporary anemia without permanent histological alteration in the brain substance. This seems improbable for it is well known that pugilists, whose idiom for concussion is "knock out", all finally develop symptoms of permanent brain injury. I have been told by a pugilist that it is, indeed, unnecessary for the sufferer to have been "knocked out" but that the constant jarring of the brain from jaw punches over years of time brings about a train of symptoms easily recognizable as those of chronic brain injury. There are severe and immediately fatal concussions of the brain in which there is no trace of hemorrhage or any other pathologic-anatomic finding.

A common conception today of the pathology of the most severe types of brain injury is that of acute traumatic swelling or edema not unlike, in its fundamental principles, that due to injury elsewhere. Of course, trauma any place in the body immediately excites circulatory changes with swelling and an accumulation of fluid in tissues. But the peculiarity of the circulation in the brain lies in the fact that this organ is enclosed in a non-yielding capsule, the skull. It cannot, therefore, become enlarged like other organs and the increase of the fluid compresses the brain substance against the rigid bony walls of the skull giving rise to an increase in intracranial pressure. First occurs a venous obstruction and passive congestion and finally a tighter compression which collapses the arteries and gives rise to an anemia of the brain. It is on the basis of this increase in intracranial pressure and compression of brain tissue that nearly all symptoms in these cases have been interpreted.

The cerebro-spinal fluid as a factor in raising intracranial pressure demands careful consideration. This fluid, as we know, is produced in the choroid plexus of the lateral ventricles. It passes through the foramen of the Monro into the third ventricle, then through the aqueduct of Sylvius into the fourth ventricle and then through the foramen of Magendie and foramina of Luschka into the cisternae in the base of the brain. From here it spreads into the subarachnoid space over the surface of the spinal cord which literally floats in it. It reaches the blood circulation by filtration through the Pacchonian bodies along the

brain sinuses and probably by diffusion through the arachnoid tissue. Normally, this secretion is constant and to maintain a mean level of pressure absorption must also be constant. Alteration in either secretion or absorption will, of course, influence the intracranial pressure. Recently much attention has been paid, particularly by Jackson, to the cerebro-spinal fluid as a vital factor in the production of increased intracranial tension and to its withdrawal by means of spinal puncture as a means of treatment in acute head injury. I do not believe it is yet known exactly the value that should be placed on such observations. I believe that in many of these cases the swelling of the brain substance distorts or collapses the foramina through which the fluid makes its exit from the ventricles, thus giving rise to a certain degree of internal hydrocephalus. Undoubtedly, also in some cases there occurs interference with absorption. Sharpe is of the opinion that in many cases of chronic brain edema following head injury, organization of subdural and subarachnoid clots causes interference with absorption thus giving chronically increased intracranial tension. It has been my observation that many cases presenting the symptoms of marked increase in intracranial tension have shown a pressure little, if any, above normal on the spinal manometer and I am not convinced that fluid pressure in every case represents brain pressure.

The question of cerebral edema is not by any means settled and it offers a large field for experimental work. I believe that the symptoms in these cases of acute head injury are not entirely dependent on circulatory disturbance and alterations of intracranial tension. I believe there arises, at least in part, some injury to the nerve tissue in itself and only secondarily through some connected circulatory disturbance. I believe that in many cases even though the brain were not confined and though it were permitted to swell unhindered, thus eliminating intracranial pressure as a factor, death would occur from changes in brain tissue, physical or chemical, that are the essential lesions of traumatized brains. Death occurs, of course, in the majority of these cases from medullary collapse or bulbar paralysis due either to compression or to primary nerve cell injury.

The cases of meningeal vessel hemorrhage

need no discussion. Usually the middle meningeal or the lenticulostriate artery is ruptured. The hemorrhage may, naturally, be extradural or sub-dural. Accompanying the meningeal hemorrhage there is usually a generalized brain injury of one of the types above described which may, of course, be fatal even though the isolated vessels be secured and ligatured.

As is to be expected, the greater the distance the areas of the brain are from localized pressure such as occurs in middle meningeal hemorrhage, the less they are affected. The falx cerebri and the tentorium divide the brain into three fairly separate compartments and it is possible for one hemisphere to be disabled by pressure and the opposite hemisphere and the medulla lying beneath the tentorium to be only slightly affected. If the hemorrhage is subdural the pressure is, of course, generalized.

It is not my intent to discuss in detail the skull fractures that usually accompany these brain injuries. They may, of course, involve the anterior, middle or posterior fossae. In my experience those of the middle fossae have been the most common and those of the posterior fossae the most fatal. They commonly involve the bony sinuses especially the sphenoidal. Often the posterior fossae fractures extend into the mastoid cells. It is necessary to recall that basal fractures are usually compound for they may extend into the naso-pharynx or the middle or the internal ear. I have had two cases involving, by extension, the frontal sinuses. Both were fatal, one through a meningitis.

SYMPTOMATOLOGY

The clinical pictures drawn by the early writers on medical subjects are unsurpassed in many instances. There is no more vivid and accurate description of a case of concussion than that given by Sir Astley Cooper in 1820. He said "When you approach the bedside of the patient who has a concussion of the brain you will find him in what you suppose a sweetly tranquil sleep. His breathing is easy and not quicker or slower than natural; his pulse is beating with steadiness and its usual velocity; and you would be disposed to say 'do not disturb him but let him sleep on.' But when an attempt is made to arouse him he is with difficulty excited; if he be spoken to he mutters and returns an incoherent answer; and

you then discover that he is comatose. On inquiry it is found that he has received a severe blow upon the head; that immediately after he was senseless and unable to stand and that he had since vomited.

In concussion after the initial shock has disappeared consciousness will have usually returned within a few hours and the patient will feel none the worse except perhaps for some dizziness and headache. Such cases, if hospitalized, usually demand immediate discharge from the hospital and if allowed to go will return to work the following day. Most of them suffer no ill after-effects but any case of head injury in which there has been unconsciousness should not be discharged from observation within twenty-four hours. Many of these cases have concomitantly a brain injury of more or less severe character. Often after recovering consciousness from the concussion there occurs a gradually developing drowsiness, stupor, and finally a coma with perhaps paralysis. Such symptoms, of course, can mean only one thing, i. e., a slow intracranial hemorrhage with a gradual increasing brain compression, a very dangerous form of injury.

In other cases the symptoms of concussion primarily appear and these gradually merge into those of brain compression without an intervening period of consciousness. Such cases are usually associated with basal fracture and severe brain trauma. The patient is restless, difficult to handle, perhaps nauseated and he may vomit. If any subjective complaint is made it is usually that of headache. The objective symptoms which are most important may appear within a few hours or in some cases not for forty-eight to seventy-two hours. I recall a young man I saw three years ago who received a concussion in an automobile accident with a slight scalp laceration. He insisted on going home and returning daily for dressing. He had no objective symptoms of skull fracture. On the fourth day he returned with ecchymosis about both eyes and stated that during the night he sneezed violently and felt a peculiar fullness about the eyes and moisture in the ears. He arose and looked into the mirror and saw that both eyes were discolored and found bloody serum in both external auditory canals. He spat some blood and blew some from his nose. This man undoubtedly suffered a skull fracture and the sneezing opened more widely

the dura and gave rise to the objective symptoms.

Ambrose Pare, who, as we will recall, lived in the 16th century, has in his autobiography a very clear description of a case of basal fracture. It concerns an injury sustained by the Duc de Guise and is as follows: "Suddenly, after he received the blow he fell to the ground as dead and cast blood out of his nose, mouth, and ears and was fourteen days without being able to speak or reason. Also, there came upon him sometimes tremors almost like spasms and his face was swollen and livid."

It seems unnecessary to say that ecchymosis about either one or both eyes following head injury, sometimes extending over the ocular conjunctiva, in the absence of direct trauma to the eyes, means almost always a fracture of the base of the skull through the anterior fossae and into the orbital plate. Briefly, a head injury of the type we are discussing followed by "black eye" means a skull fracture. Also, the spitting of blood or blowing of blood from the nose, if there be no laceration of the tongue, cheeks or lips, or no fracture of the nose, means a basal fracture compounded into the naso-pharynx. Deeply comatose patients oftentimes do not expectorate the blood but if the mouth be opened it can be seen trickling down the pharynx. A clear or bloody discharge from the ear means, of course, a basal fracture for such discharge is either cerebro-spinal fluid or blood coming from the cranial cavity. In a few cases I have noted a unilateral or bilateral exophthalmos due to, I presume, a retro-ocular hemorrhage. In posterior fossae fractures there is often discoloration over the mastoid region. In many of these cases there are no scalp wounds or at most very slight lacerations. Because of the dark skin in negroes it is often difficult to determine from the objective symptoms whether or not a skull fracture is present. I believe colored people do not sustain skull fractures nor, indeed, serious brain injuries unless the trauma be of a very severe type.

The bony damage in head injury is comparatively unimportant and it seems hardly necessary to say that a very severe brain injury may be sustained without a fracture. Some of the gravest head injury cases I have seen have given neither clinical nor radiological evidence of skull fracture. Usually

a basal fracture makes itself so plainly evident by the objective findings as to make an x-ray examination unnecessary for diagnosis and such examination is usually valueless from a prognostic or therapeutic standpoint. Again, sometimes no fracture can be shown by the x-ray in the presence of undeniable clinical evidence that such fracture exists. I am sure much harm is often done by transporting a critically injured patient to an x-ray laboratory to radiograph a skull for a fracture whose presence is unerringly pointed out by the objective findings. But since head injuries are nearly always medico-legal cases they should at some time be x-rayed for it is next to impossible to convince attorneys or juries that a fracture exists unless it can be demonstrated with the x-ray.

Shock: When first seen cases of head injuries are usually in profound shock, the pulse is rapid and weak and the respiration is quick and shallow, the skin and mucous membranes pale, and the extremities are cold. Some of these patients never recover. These are the cases that suffer from brain contusion and bruising or intracranial hemorrhage of such degree as to preclude any chance of recovery from the beginning. But the majority react and with this reaction comes the classical picture of increased intracranial tension, with slow pulse, high blood pressure, deep, slow respiration, stupor or coma. Usually the patient remains unconscious. Many of them are very restless, resistant, some delirious, unmanageable and require restraint. Alcoholics, or "men of full habits" as Sir Astley Cooper mildly designates them, are apt to belong to the latter class. It cannot be too strongly emphasized that the man who has the odor of alcohol on his breath and is picked up on the street unconscious is not merely "dead drunk" in every case. Unfortunately, such diagnoses are made not only by policemen. Physicians should remember that fractures of the skull as well as fractures of the 18th Constitutional amendment sometimes produce unconsciousness.

Coma: The coma or restlessness may last a few hours or several days. I recall a man of about sixty who was deeply comatose for three weeks and who recovered. He is now entirely well. A deepening coma is always an unfavorable sign, in my opinion, and a lessening degree of coma usually indicates a change for the better. My records show a

girl of eighteen who was stuporous and incoherent for fourteen days. She became entirely clear and conscious within fifteen minutes after a spinal puncture. I do not believe, however, that the puncture caused her to regain consciousness for only three or four cc. of fluid to determine the pressure were withdrawn. I have sometimes found that those cases that are deeply comatose have low spinal pressure and cases with high pressure are not comatose. Also, some of these cases awaken within five minutes from a coma of weeks. For these reasons I cannot believe that in all cases coma is due to increased intracranial tension.

Pulse: Of that trustworthy, diagnostic and prognostic triad, pulse, temperature, and respiration the first is incomparably the most valuable in head injuries. If the patient be seen in a condition of shock immediately following the injury the pulse will, of course, be rapid and of poor quality. In those cases in which reaction occurs the rate decreases and within twelve hours, or usually before, it will probably have reached seventy or eighty per minute and the blood pressure will have risen. Personally, I have found the variations in pulse and blood pressure one of the most valuable indexes as to the condition of the patient. A gradually slowing pulse and mounting blood pressure indicate unerringly increased medullary compression. I have observed but few cases that have survived if the pulse has gone below fifty though I recall a man of about sixty years who recovered whose pulse varied between forty-five and forty-eight for twelve days. In the fatal cases the rate is rather suddenly and rapidly accelerated the blood pressure falls and there comes a circulatory collapse with death. Any therapeutic measures, whatever they may be, are of no avail once the pulse has suddenly begun to rise and the blood pressure to fall.

Temperature: Only extreme variations of temperature are significant in head injuries. Moderate fluctuations have no symptomatic or prognostic value. During the period of initial shock the temperature is, of course, subnormal. When reaction occurs it usually reaches ninety-nine or one hundred and remains there until recovery has been assured or death foretold, by circulatory or respiratory changes. In some cases just before death, temperatures of one hundred and five or one hundred and six have been re-

corded. These are explained on the basis of a disturbance of heat regulating center in the medulla.

Respiration: Respiration, like pulse, is rapid during the initial shock. If reaction occurs it soon drops, however, and resembles in most cases that of the "sweetly tranquil sleep" described by Cooper. In extreme degrees of medullary compression Cheyne-Stokes respiration develops and in some cases the period of apnoea or non-breathing seems so prolonged as to indicate final and permanent suspension of respiration. The opinion is again expressed, however, that the most valuable guide is the pulse and it will have previously pointed out the on-coming respiratory embarrassment and when this latter arrives collapse may be expected at any moment.

Pupillary Changes: Usually the pupils are moderately and equally dilated and react slowly to light. Any inequality is significant only if quite marked and prolonged. Usually such inequality means localized pressure due either to hemorrhage or edema. A small degree of pressure causes a narrowing and a greater degree dilatation of the pupils. One authority has said "a sluggish or absent reaction to light indicates a grave prognosis and no time should be lost in relieving cerebral compression." It is difficult to agree with this for rather often one meets a sluggish reaction and indeed, sometimes a loss of reaction in which recovery occurs unimpeded.

I believe any pupillary change is to be considered only with the general clinical picture and personally I have grown to look upon such changes as interesting observations but they are thought to be valuable only if correlated with other symptoms of localizing character such as spasticity or paralysis. Most certainly they should never impose prognosis nor dictate treatment.

Ophthalmoscopic Findings: The changes in the fundi are accurate guides in the majority of cases as to the degree of brain compression in acute head injuries. But the practical importance of these observations is somewhat minimized by the difficulty of securing such evidences sufficiently early and often to be of any value. It is necessary for the ophthalmoscopist to have examined the fundi before change has occurred to properly interpret the pathology he may subsequently find. Changes in the fundi usually do not

occur until six to twelve hours after the injury. One does not often see "choked discs" in these cases excepting in extreme and fatal degrees of compression. But there does occur a "blurring" and indistinctness of the nasal margins of the discs. A surgeon of very large experience in head injuries advises immediate decompression if any blurring shows within three hours after the injury. I do not believe that in the majority of cases there has been sufficient recovery from shock in three hours to permit operation. In any event, unless there be a meningeal hemorrhage with localizing signs, a degree of pressure sufficient to demand operation will rarely have arisen within three hours. Like other isolated evidence ophthalmoscopic findings are a part of the material on which to base a conclusion but they should not be determinants of treatment.

Cerebro-Spinal Fluid: The hydrostatic pressure of the cerebral-spinal fluid is raised in all cases of increased intracranial tension. But it need not, as a corollary, be admitted that the manometric reading of the fluid pressure at the lumbar spine in all cases represents intracranial pressure. Hydrostatic pressure, as we know, varies greatly depending upon whether or not there is a clear pathway for movement of the fluid and on whether or not the fluid itself is mobile. It is a long distance from the cisterna magna at the base of the brain to the lumbar spine — a way that is divided and loculated by thousands of arachnoidal septae. These septae must offer some obstruction to a free flow of fluid and if it be bloody, as it often is, there will more or less clotting which will block and immobilize the fluid. If this be true not only will the spinal manometric readings be deceptive but withdrawals of fluid for diagnostic or therapeutic purposes will in all probability be dangerous for reasons that will be advanced later.

I have observed cases of marked increase in intracranial tension with very moderate elevations of spinal pressure and I am not prepared to say that in every case fluid pressure represents brain pressure nor that the severity of a head injury can be estimated by the amount of elevation of the spinal fluid pressure. It is to be remembered that an extensive laceration of the cerebral cortex, a very grave type of injury, can occur with only a very mild increase in intracranial tension. Men of broad experience rely greatly

on spinal pressure readings in diagnosis, prognosis and therapeutics. I believe their value has not been realized until recently. But, I feel that there is a disposition to place too much emphasis on them as diagnostic indicators and to promise too much from withdrawal of fluid as a therapeutic aid. The careful clinician will give due weight to spinal fluid pressure but he will not let it overbalance a judgment arrived at by an accurate summary of the case in all its phases.

The absence of blood in the fluid does not, of course, eliminate the presence of an intracranial or even a subdural or subarachnoidal hemorrhage. A clear fluid may be obtained at spinal puncture and on operative decompression a subdural hemorrhage is demonstrated.

Reflexes and Paralysis: After the shock is passed the reflexes usually return and in the majority of cases they are exaggerated. Ankle clonus, the Babinski reflex, etc., are sometimes found. It is important that a careful interpretation of these latter be made as well as the various other localizing neurologic signs as they may be due to temporary edema or compression and not indicative of permanent cerebral alteration or compression.

It is not uncommon to note twitchings or localized convulsive movements of an extremity or of a few muscles in acute head injuries. This presumably is due to localized cortical irritation from a hemorrhage or edema. But I do not recall a general convulsion in any cases I have seen and I am sure they are comparatively infrequent. The reason I do not know, but very probably any injury grave enough to produce such a convulsion has so damaged cortical cells as to suspend function.

The absence of paralysis does not diminish the gravity of a brain injury nor does its presence necessarily indicate a decompressive operation. We are apt to attribute paralysis to meningeal hemorrhage, but quite often it is due to a localized edema and it will clear up without operation. I saw such a case a short time ago: A sub-temporal decompression was done though not altogether because of paralysis but because of the general increase in the intracranial tension. The patient has recovered entirely from the paralysis. Cranial nerve paralysis will not be discussed. They are not uncommon but are usually temporary as they are usually due to

compression rather than division of nerve fibres.

Late Effects: One of the most interesting and at the same time most discouraging phases of head injury cases cannot be discussed here. It is that of the late permanent alterations in personality and social status of these old "head cases". Not over fifty per cent of them ever become self supporting. They all present the same train of symptoms varying in degree rather than in character. The common complaints are headache, vertigo, bad eyesight, sleeplessness, lack of mental concentration, bodily weakness and inability to apply themselves to any task. Most of them present no definite neurologic signs unless it be a slight increase in spinal fluid pressure. They are usually classed as functional nervous disorders. This, I believe is not because there is no organic basis for their complaints but because our present day means of detecting organic nervous disease is lamentably deficient. The difference between organic and functional nervous disease in these cases is probably one of degree rather than type.

These old "head injury cases" present some remarkable changes in personality. I recall a model boy of twelve, obedient, industrious, and ambitious, who, became a truant, thief, loafer, following a skull trauma. A stenographer twenty-three years old who was very tractable and thrifty and who held a lucrative position became a spendthrift, quarreled with her mother and was unable to hold a position because of her uncontrollable temper. She finally developed epilepsy, fell down stairs and, I am told, died within a few minutes from a second head injury. In my experience older people whose emotional reactions are more subdued and whose mental processes are more grooved, are not so apt to change markedly in personality.

TREATMENT

It is recorded that Hun To, a famous Chinese Surgeon who lived about 200 A. D., offered to cure King Tso's headache by trephining. For this proffer of professional aid the monarch befittingly ordered him beheaded. Thus tragically ended this Chinese career as a neurological surgeon.

Sir Astley Cooper relates the case of a young man with a head injury whose recovery he attributed to the withdrawal of 208 ounces of blood in twelve days. This therapy seems hardly less drastic than that for the

mere proposal of which Hun To lost his life.

Conservative surgeons are somewhat less bold in their treatment today. In my opinion, twenty or twenty-five per cent only of the cases under discussion need trephining and bleeding is, of course, universally condemned. Nevertheless, as has been said, all head injuries need close observation and some form of active treatment. Any injury to the head sufficient to produce unconsciousness for a measurable period of time is grave enough to demand bed confinement for twenty-four hours or longer.

I suppose a more serious error can scarcely be committed by a surgeon who is attending an injury to the brain than to forget that only nature herself employing her chief agent — rest — can accomplish repair in these cases. Nerve tissue is highly susceptible to trauma of any kind and has little capacity for repair. A concussed or contused brain is unequal to anything but the most meager demands. It recovers slowly from its injury — it soon becomes fatigued and if demands are made upon it too soon after injury there is very likely to result chronic brain disease and disability. These cases are too often allowed to be up and about and to return to work long before there has been anything like complete recovery. They require rest for full recovery depending on the extent of the injury.

It is unnecessary to state that in all cases of head injury the preliminary shock is to be treated in the usual manner. When reaction occurs there is often an uneasy stupor, restlessness, or even a mania that exhausts the patient if not controlled.

A sedative should be given of which I think morphine in small doses is the best. It is neither necessary nor advisable to attempt to arouse the patient. To force nervous activity or mental concentration in these cases does harm and serves no purpose. Ice to the head relieves the headache, and I am sure, promotes rest. One should not be content with one icebag on the pillow in more or less proximity to the skull. Two or three large bags with ice finely chopped and fastened to the skull like a helmet are grateful to the patient and help in relieving the restlessness.

A cathartic, preferably magnesium sulphate, should be given if it can be swallowed. If no medication can be taken by mouth an enema should be used to move the bowels.

The improvement that is often noticed following a free bowel movement is surprising. If fluids cannot be taken by mouth no attempt should be made to force them for they may be aspirated and pneumonia result. I have not found any drugs given by mouth of any value excepting cathartics. Urotropin, while it is excreted into the cerebro-spinal fluid, is valueless because it exerts its antiseptic action only through the formaldehyde and ammonia it liberates in an acid medium and the cerebro-spinal fluid is not acid in reaction.

The acute urinary retention that sometimes develops in these cases is often relieved with a free bowel movement or with the expulsion of an enema. Catheterization is to be avoided if possible. The deeply comatose cases are allowed to establish an overflow. In an unconscious and restless patient with a distended bladder that cannot be emptied I usually catheterize. Sometimes the restlessness is due to the over-distended bladder.

The measures above outlined suffice for all cases of concussion and for many cases of so-called contusion with more or less brain edema and compression. But there is a certain number of cases of contusion or laceration which show no improvement, which remain stationary, or which grow worse with slowing pulse, rising blood pressure, deepening coma, stertorous breathing, and blurring discs, i. e., all the symptoms increasing intracranial pressure.

These cases seem to demand decompression by either the spinal or the subtemporal method. Sharpe says any case with a pressure of over sixteen mm. of mercury demands operative relief—five to nine mm. of mercury being normal for the adult. Jackson, who advocates spinal puncture and drainage almost to the exclusion of other methods of diagnosis and treatment, sets no limit on the degree of pressure in which it may be employed nor the frequency with which it may be repeated. Spinal drainage suffices in many cases and in some it does not. The writer wishes to state that there is pathologic-anatomic ground for his clinical observation that spinal pressure does not always reflect intracranial pressure. With bloody fluid the possibility of block to the free circulation of the fluid always exists. Undoubtedly, in such cases spinal drainage should be employed with caution for lessening spinal pressure without at the same

time bringing about an equal reduction of the intracranial pressure is apt to be catastrophic. I have never felt it safe to withdraw any large amount of bloody cerebro-spinal fluid. My fears of medullary impaction do not seem to have been borne out by the clinical experience of other observers but I prefer to entertain them. It is very difficult to measure the amount of cerebro-spinal fluid secreted in twenty-four hours but it has been estimated about seven hundred and twenty cc. with about one hundred and twenty cc. present in the dural sac and ventricles at any one time. This would indicate, and clinically it has been shown to be true, that after the withdrawal of fifteen or twenty cc. of fluid the pressure returns to its original level within twenty minutes. There can be no doubt that spinal drainage if used early and intelligently is a safe and sufficient treatment in many cases. It cannot and should not displace other methods.

The administration by mouth of saturated solution of magnesium sulphate has proven valuable in my hands. It has been shown that a hypertonic solution (about 30%) of sodium chloride given intravenously definitely lowers spinal fluid pressure and decreases brain bulk with relief of the symptoms of compression. There occurs a reversal of the circulation of the cerebro-spinal fluid and marked absorption in the ventricles and through the choroid plexus. I am convinced this form of treatment has equal or greater value than that of withdrawal of fluid by the spinal route.

The cases that demand operative decompression are those that grow no better under other measures or those that show a slow but undeniable increase in intracranial pressure. But one should not wait until the spinal fluid pressure has reached 20 mm. of mercury, until the pulse has begun to rise and the blood pressure to fall, until the respiration has become Cheyne-Stokes and the pupils have become dilated and fixed. Such cases are suffering from a medullary compression of such degree that no treatment is of any avail. These patients will die inevitably in a few hours.

The alternative, i. e., opening the cranial cavity is a step not lightly to be undertaken and yet one which often saves lives. What makes a decision difficult and often stays the hand of the experienced surgeon is the sudden and unaccountable change these

cases often make for the better without apparent cause. The determining factors for or against operation seem so ill-defined at times that the surgeon feels he has thrown science to the winds and embraced chance in making his decision. The writer recalls a typical case he followed at the Von Eiselsberg Clinic in Vienna two years ago. A man who fell off a street car had been deeply unconscious for two weeks without apparent change in his condition under routine treatment, including spinal drainage. Von Eiselsberg was importuned daily on his rounds by his assistants for permission to perform subtemporal decompression. A final negative decision was made on the grounds that the chances were equally good with or without operation and that the precarious state of the Austrian government finances at that time made it necessary to establish a clear indication for all operations. The following day a change for the better occurred and one week later the patient walked out of the hospital.

In many cases no anesthesia is required for subtemporal decompression or at most only a few drops of ether since the patient is comatose. Almost invariably I open the dura. In only one case was a ventricular puncture carried out. A few strands of silk worm gut or a small piece of rubber tissue is left for drainage. The continued post operative use of the saturated solution of magnesium sulphate as soon as it can be given by mouth is important. The treatment of the scalp injuries and of the compounding wounds into the ear and pharynx in basal fracture need no discussion. It is a reprehensible practice to syringe or in any way to disturb the ear or nose. Antiseptic solutions are valueless and may force infection into the meninges.

Finally we should recall again that only about fifty per cent of the severe head injuries that live ever become self supporting. Of the remaining fifty per cent only a small proportion are capable of resuming their former place in society.

The alterations in personality and reactions to environment are often striking and sometimes most distressing. They may be so profound as to lend support to the belief that character is determined by chemistry and that personality is a matter of variations in chemical equations. Whether or not this be true there exists, mercifully, an inher-

ent capacity in all our tissues for repair following injury or disease. But such repair can take place only if there be rest to the tissue involved. The brain is an organ with comparatively little reparative power and unless we realize the grave damage it has sustained in these cases we cannot appreciate the necessity of prolonged rest following head injuries.

In conclusion I wish to be permitted here to quote John Hilton, the English surgeon who said, in 1860, in his unsurpassed "Lectures on Rest and Pain" — I would, however, solicit the attention of the profession to what observation has taught me — the recognized lesions of the brain and its membranes associated with blows upon the head (whether the cranium be fractured or not) do not generally, or as a principle of treatment, obtain that extent of mechanical rest which is consistent with expectation of perfect and complete structural repair. This error in the treatment of such cases is one of the chief sources of disease of the brain and membranes which we meet with in practice. Now, with all due deference I venture to think that the considerations applicable to external injury ought to indicate the principles of treatment to be adapted to cases of concussion of the brain. No doubt our duty should be this: To give the brain absolute rest; to rely on natural reaction or nature's power to repair the injury or disturbance".

BIBLIOGRAPHY

1. Sharpe, Wm. Indications for and against operation in the treatment of injuries to the head. *Amer. Jour. of Surg.* Nov. 1922.
2. Munro, Donald. Indications for operation in the treatment of injuries involving the brain. *Boston Med. & Surg. Jour.* March 6, 1923.
3. Jackson, Harry. Circulation of the cerebrospinal fluid. *Journal A. M. A.* October 21, 1922.
4. King, J. E. J. Surgical treatment of cranial and intracranial injuries. *New York State Med. Jour.* Aug. 1922.
5. Sachs, Ernest. Fractures of the Skull. *Surg. Clinics of N. A.* Dec. 1922.
6. Weed & Hughson. Intracranial venous pressure and cerebrospinal fluid pressure as affected by the intravenous injection of solutions of various concentrations. *Amer. Jour. Physiol.* 58:100-129, 1922.
7. Weed & Hughson. Systemic effects of the intravenous injection of solution of various concentrations with especial reference to the cerebrospinal fluid. *Amer. Jour. Physiol.* 58:53-84, 1921.
8. Foley, F. E. B. Clinical uses of salt solution in conditions for increased intracranial tension. *Surg. Gyn. & Obs.* 33:126-136, 1921.
9. Foley, F. E. B. Alterations in the currents &

absorption of cerebrospinal fluid following salt administration. *Arch. of Surg.* March, 1922.

10. Dowman, Chas. E. Management of head injuries with real or potential brain damage. *Jour. A. M. A.* December 30, 1923.

11. Baird, John H. General management of acute injuries to the brain. *New York Med. Jour. & Med. Sept.*, 1922.

12. Ayer, Jas. B. Spinal subarachnoid block as determined by combined cistern and lumbar puncture. *Arch. Neurol. & Psychiatry.* 7:38-52, 1922.

13. Leschke, E. Xanthochromia of the spinal fluid. *Deutsche Med. Wchnschr.* 47:373. April 7th, 1921.

14. Apfelbach, C. W. Studies in traumatic fracture of the cranial bones. Edema of the brain bruises of the brain. *Arch. of Surg.* 4:434-450, 1922.

15. Sachs, Ernest. Fractures of the Skull. *Southern Med. Jour.* Oct. 1922.

16. Nichols, Edw. H. Head Injuries. *Surg. Clinics of N. A.* June, 1921.

17. McKelvey, J. L. Traumatic Cerebral Hemorrhage. *Med. Jour. Australia.* Oct. 7, 1922.

18. Harris, Wilfred. Diagnostic value of lumbar puncture in cerebral and spinal hemorrhages. *Brit. Med. Jour.* April 22, 1922.

19. Whitehead, R. E. Fracture of the base of the skull with concussion of the brain. *Indiana St. Med.* June, 1921.

20. Pound, A. M. Brain Injuries. *Iowa St. Med.* March, 1921.

21. Carpenter, E. R. Cerebrospinal fluid pressure in diagnosis and treatment. *Texas State Med.* Jan. 1922.

22. Hadley, E. E. Mental symptom complex following cranial trauma. *Jour. of Nervous & Mental Dis.* Nov. & Dec. 1922.

23. Kiely, C. E. Intracranial pressure in disease. *Jour. A. M. A.* Feb. 19, 1921.

24. Weigeldt, W. Cerebrospinal fluid at different levels. *Muench Med. Wchnschr.* July 8, 1921.

25. Whitehead, R. E. Concussion of the brain and fractures of the skull. *Indiana St. Med.* Aug. 1922.

26. Dandy, Walter E. Space-compensating function of the cerebrospinal fluid — its connection with cerebral lesions in epilepsy. *Johns Hopkins Hosp. Bull.* Aug. 1923.

27. Losee, J. R. Hemorrhages in the New Born. *Med. Rec.* Sept. 24, 1921.

28. Vaglio, R. Intracranial hemorrhage in the new born. *Pediatrics* 29:12-1921.

29. Schwartz, P. Suction hemorrhages during delivery. *Zeitschr. f. Kinderheilkunde*, July 29, 1921.

30. Emmett, John M., and Wilkinson, Robert J. Birth Trauma. *Med. Jour. West Va.* Oct. 1921.

31. Parsons, T. R., and Shearer, C. The Acid-base equilibrium in the cerebrospinal fluid. *F. R. S. J. Physiol.* 54:62-67, 1920.

32. Seham, Egerer, and Nixon, C. F. Comparative studies in the chemistry of blood and cerebrospinal fluid. *Arch. Int. Med.* 28:561-585, 1921.

33. Boveri, P. Permanganate Test for Albumin in the cerebrospinal fluid. *Policlinico* 28:450, Oct. 1st, 1921.

34. Moorhead, J. J. Fractures incident to Occupation. *Nations Health.* March, 1921.

35. DaCosta, J. C. Fractures of the value and

base of the skull. Tear of the Dura. Laceration of the Cortex and Hemorrhage from a posterior branch of the middle meningeal artery. *Surg. Clinics of N. A.* Feb. 1921.

36. Reverchon, Worma, and Roquier. Traumatic Lesions of the pituitary. *Presse Med.* 29:741. Sept. 17, 1921.

37. Kulcke. Fractures of the base of the skull. *Deutsch Ztsch. f. Chir.* Sept. 1921.

38. Tilmann. The Skull bones and the brain. *Arch. f. klin. Chir.* Nov. 24, 1921.

39. Hanson, A. M. Report of a series of 44 craniocerebral injuries operated upon in the zone of advance of the A. E. F. *Mil. Surg.* 48:32-42. Jan. 1921.

40. Burger, T. O. Acute Brain injuries. *Calif. State Med.* May, 1921.

41. Karlefors, J. Access to Pons and Cerebellum. *Upsala Laekareforrenings Fordhandlingar.* September 1st, 1921.

42. Pedrazzini, F. Mechanics of the skull and physics of the brain. *Policlinico* July 18, 1921.

43. Finochietto, E. Intracranial hypertension: Physiology & Pathogenesis. *Revista de la Assoc. Med. Argentina.* October, 1920.

44. Demanur, F. Wounds of the brain. *Beitrag z. klin. Chir.* 121-491, 1921.

45. Siewers, A. B. Eye signs in intracranial tumors of the anterior fossa. *Arch. Neurol. & Psychiatry.* Oct. 1921.

46. Eagleton, W. P. Fractures of the skull. *Arch. of Surg.* 3:140-154-1921.

47. Orr, H. W. Early and Complete immobilization as a factor in the preservation of joint function in the treatment of fractures. *Amer. Jour. Surg.* May, 1921.

48. Behan, R. J. Fractures of the skull. Mechanism of their production. *Int. Clinics.* 31st series—1921.

49. Rosenstern, J. The skull of the prematurely born. *Zeitsche f. Kinderheilk.* May 15, 1922.

50. DeStefano, S. Lumbar Puncture for the new born. *Pediatrics* 30, Jan. 1922.

51. Zachariae, P. Marks of pressure on fetal skull. *Hospitaltidende* 65:860 — May 31, 1922.

52. Wentzler, E. Gage for intracranial pressure in infants. *Arch. f. Kinderheilkunde.* Jan. 1922.

53. Towne, E. B., and Faber, H. K. The Diagnosis & treatment of intracranial hemorrhage of the new born. Report of a case. *Calif. St. Jour. Med.* Jan. 1922.

54. Ballance, A. C., and Ballance, Chas. A. Intracranial hemorrhage in the new born. *Lancet* 203: 1109-1112-1922.

55. East, C. F. T. Cerebral hemorrhage in a new born child. *Brit. Jour. Children's Dis.* Dec. 1922.

56. Wuellenweber, G. Concentration of the cerebrospinal fluid. *Muenchen Med. Wchschr.* Sept. 30, 1922.

57. Leriche, R. Hypotension in cerebrospinal fluid. *Lyon Chirurgial.* Jan. 1922.

58. Hermann, G. The cerebrospinal fluid after the inflation of Air. *Med. Klin.* Sept. 3, 1922.

59. Strecker, H. Circulation of the cerebrospinal fluid. *Muenchen Med. Wchschr.* 69:1726, 1922.

60. Grant, F. S. Intracranial Aerocele follow-

ing a fracture of the skull. *Surg. Gyn. & Obs.* 36: 251-255, 1922.

61. Risdon, Fulton. *Plastic Surgery of Head and Neck.* Canadian Med. Jour. 12:797, 1922.

62. Gutierrez, V. Fracture of the skull. *Revisita de la Assoc. Med.* July and August, 1922.

63. Hanson, A. M. Employment of Zigzag incisions in covering large scalp and skull defects in war surgery of the head. *Military Surgeon.* August 1922.

64. Jones, J. F. X. Two fractures of the skull. *Amer. Jour. of Surg.* Sept. 1922.

65. Jackson, E. W. Acute brain injuries. *Kentucky Med.* March 1922.

66. Mintz, W. Operations in the posterior Cranial Fossa. *Arch. F. klin. Chir.* May 13, 1922.

67. Alamartine, H. Decompressive Trephining. *Lyon Chir.* Oct. 1921.

68. Davies, G. A. Extensive Head Injury from a Circular Saw. *Jour. A. M. A.* Jan. 14, 1923.

69. Tilmann. Operative treatment after trauma of the Skull. *Med. Klin.* March 26, 1922.

70. Hyalop, G. H. Fracture of the base of the skull with loss of brain substance followed by recovery. *Jour. A. M. A.* Nov. 11, 1922.

71. Hatton, E. H. Ratio between deaths from Traumatic fracture of the cranial bones and from alcohol. *Jour. A. M. A.* Dec. 31, 1921.

72. Graves, Stuart. Fracture of skull base with superficial hemorrhage on opposite side — Report of an interesting autopsy. *Kentucky Med. Jour.* Sept. 1922.

73. Caldwell, John A. Contrecoup Damage to the brain in head injuries. *Ohio State Med. Jour.* Feb. 1922.

74. Kearney, J. A. Value on Eye observations in fractures of the skull and severe head injuries. *New York State Jour. Med.* Aug. 1922.

75. Malone, J. Y. Value of Blood pressure in acute cerebral compression. *Annals of Surg.* 75: 732-733, 1922.

76. Burch, L. E. Head Injuries. *Southern Med. Jour.* March, 1921.

77. Zylberlast—Z. and N. Modification of Pressure of Cerebrospinal fluid by changed position of body or head. *Revue Neurologique*, 37: 1217-1221-1921.

78. Gottlieb, Mark J. A report of two cases of head injury with abnormal otoneurological findings. *The Laryngoscope*, Oct. 1922.

79. Stewart, R. M. The cerebrospinal fluid: Its source, distribution, and circulation. *Jour. Neurol. & Psychopathology*, Oct. 1922.

80. Schwartz, Dr. Ph. Traumatic cerebral hemorrhage in the new born. *Muensch Med. Wchnschr.* July 28, 1922.

81. Wilensky, A. O. Craniocerebral Injuries. *Surg. Clinics of N. A.* Dec. 1921.

82. Sachs, Ernest. Fractures of the skull. *Surg. Clinics of N. A.* Dec. 1922.

83. Colvin, A. R. Infected fracture of the base of the skull. *Surg. Clinics of N. A.* Oct. 1923.

84. Naffziger, H. C. Head injuries—Indications

for surgical treatment. *Surg. Clinics of N. A.* June 1923.

85. Meland, O. N. Management of Acute Brain Injuries. *Minnesota Medicine.* Nov. 1923.

DISCUSSION

G. ALEXANDER YOUNG, M. D., (Omaha): I hoped a surgeon would discuss this paper. It is a very valuable and timely paper because automobiles are still prevalent, as well as wild young people who drive them.

There are one or two points that came to my mind while the doctor was reading which I wish to mention. In a great many of these cases showing intracranial pressure, you can get a reduction of that pressure with the use of magnesium sulphate by mouth, if the patient is conscious enough to take it; if not, by rectal injection. Giving the patient two ounces of magnesium sulphate works well in brain tumor cases where one wishes to reduce intracranial pressure, and in cases of acute pressure following brain injury, it has a similar effect.

With reference to the time of operation: Whenever the symptoms of slow pulse, slow respiration, cloudy optic discs, and the spinal fluid pressure running from 15 to 40 mm. of mercury are present intracranial pressure of a serious nature is present and surgery is indicated. There should be decompression as soon as those signs are in evidence, especially if the patient is deeply comatose.

If you are unfortunate enough to run across a case of head injury where the individual is alcoholic or suffering from arterial hypertension, and where signs of increased intracranial pressure are present, a decompression operation is indicated at once. Where put off for two or three weeks because the patient may be conscious a later operation is apt to be of no benefit. The patient may not die but progressive choked discs and a permanent blindness ensue.

I think every man who is apt to meet these head injury cases should have a spinal fluid manometer. You do not need to spend thirty dollars for one. Get a fifty-cent graduated pipette and bend it in the form of a U-tube; turn over the ends at right angles and attach a rubber connection with a glass nozzle that will fit into the spinal puncture needle; put inside the U a millimeter rule, and you have a perfectly good manometer.

—1520 City National Bank Bldg.

CHOLECYSTOSTOMY VERSUS CHOLECYSTECTOMY

John B. Deaver and Stanley P. Reimann, Philadelphia (*Journal A. M. A.*, June 28, 1924), state their views as follows: Cholecystectomy is the operation of choice. It is as safe as cholecystostomy; it removes the cause of the vicious circle; the patient does not miss an organ which has probably been functionless or in which function has been much impaired for some time, and the chances of complete recovery or cure are greater, recurrences being less frequent and usually less serious than after cholecystostomy.

HOSPITAL STANDARDIZATION IN ITS APPLICATION*

Edmund G Zimmerer, M. D., Lincoln, Nebr.

To attempt to deny before a group of physicians, hospital officials, or any one else who has a proper conception of the aims of the medical profession, the manifest propriety and usefulness of the minimum standard of hospital efficiency promulgated in 1915 by the American College of Surgeons, were indeed a futile waste of effort. On the other hand it would be useless for me to reiterate arguments in defense of a movement which is conceded to be an expression of the high idealism of a profession whose code of ethics is as sound and as sacred as it is ancient. And yet, while it is easy to give our approval to a set of rules which on paper is well nigh perfect, it may be readily seen that to apply to such rules the test of actual conditions in a small hospital is quite another matter. Hence, while we heartily endorse the principal underlying the program of hospital standardization, we upon whose shoulders falls the responsibility of applying it, and applying it in such wise as to bring about the greatest good to humanity and at the same time obviate friction and unpleasantness as much as possible, discover many obstacles and face many problems, never perhaps dreamed of by those who created the code. I do not assume in presenting for your consideration a few of these difficulties, to set them up as objections to the minimum standard. I acknowledge that some of them are quite local in character, and consideration of them can be useful only inasmuch as hospital conditions in our state are similar. Many of our difficulties are simply solved in a teaching hospital or one connected with a medical school, which ours is not.

Hospital standardization on close analysis is shown to involve some principles which were quite revolutionary in our community. As is the case in every great reform, it wrought changes which tore at the very heart strings of tradition and customs which were sacred with age. In brief, the program not only takes the hospital from the control of the doctor whose word and wish was formerly the sole law of the institution, but it has actually put the physician, to some extent, under the control of the hospital. To the younger generation, brought up in an era when paternalism in governmental af-

fairs and State Medicine raise their heads menacingly here and there in our land, this is not so startling. To the older physician, unaccustomed to regulation, examination and inspection, it was positively abhorrent.

In a hospital formerly open to any licensed practitioner, of good reputation, who did not violate the strict code of Catholic hospitals, the selection of a staff was the first great problem presented by acceptance of the minimum standard. Here were men who for years had filled the beds with their cases, conscientious men, men of the old school, unused to history taking, to inspection of their work, etc., compelled for the first time to submit records of their work to men with less experience and their juniors in years.

The first question which occurs then in connection with the selection of a staff is this: Who shall select the medical staff? Shall it be a medical or non-medical authority? On the one hand we have professional rivalry, petty jealousy, legitimate competition to contend with; on the other, ignorance, religious prejudice and the necessity of making the hospital pay. This was quite readily, and I think quite satisfactorily taken care of by the adoption of a rule empowering the executive committee composed entirely of medical men, two selected by the staff and two by the hospital, to nominate staff members subject to veto by the Sister Superior. Thus the Sister has no power to nominate, the staff no power to confirm appointment, and appointees must be mutually satisfactory to the house and staff.

Another difficulty which is not yet satisfactorily eradicated is in the matter of appointments to specialties. As is quite generally the case, the majority of men practicing in the hospital at the time the staff was organized, sought appointment as surgeon. It was contended by some that membership in the American College of Surgeons, be made a requirement for qualification as a surgeon but this was denied, and whereas the surgical section insisted that men who engaged in general practice should not be listed as surgeons, it was manifestly unfair to the men who limit their work to consultation practice in diagnosis to list the general men as internists.

One who follows the trend of hospital

*Read before the annual meeting of the Nebraska State Medical Association, Omaha, May 13-15, 1924.

management today cannot but be impressed with the tendency toward making the hospital a modified, an enlarged and perfected group, and I must confess that, conceiving the function of the hospital as being primarily service for the patient — a small, highly specialized staff is the ideal. How is this possible in a community where the exigencies of making a living seem to require that the doctor do everything he is permitted to do?

I feel that I am correct in saying to the credit of our staff, that fee splitting has not been a grave problem with us. By its careful selection of staff members a hospital can do much toward eradicating an evil which medical societies and legislation have been powerless to put down.

As is the case with the minimum standard, rules and laws are easily drawn up but difficult of enforcement. Staff members are slow to impose penalties upon their brethren, and here again the non-medical authority of the hospital can advantageously be used to enforce the recommendations of their executive committee.

Regulations governing the admission of new members are particularly difficult to draught satisfactorily. In a hospital, for many years the only institution in the city not under private management, there is this situation. The staff must not be so large as to be unwieldy. Yet, in a growing city there are men constantly coming in, well qualified by experience, by ethical standards, by prestige in professional circles for position on the staff. True, men may be admitted to practice in the institution without such membership, but their names and positions demand that they be accorded greater consideration. Hence, the impracticability of setting down rules that circumstances make but a hindrance within a few months.

One of the most important regulations of the minimum standard is that providing for staff meetings. Regular participation in such meetings, conducted as they should be, is indeed as someone has aptly said, a test of medical patriotism. Attendance is in itself something of a problem. There is so much organization, professional, commercial, civic and social, that the physician finds it irksome and difficult to find time for such a meeting. We feel that we have overcome this objection to some extent by holding staff meetings following a dinner at 6:30, thus

permitting staff members to keep appointments of a social or private nature later in the evening.

The busy physician is scarcely to be blamed for his unwillingness to give another evening to listening to the same kind of papers that he hears at the county society meeting, the surgical, pediatric or whatever other society he belongs to and anywhere else where men of medicine foregather. But, he is blameworthy when he refuses to participate in staff meetings as they should be conducted.

To be frank, here is the crux of the whole situation — almost all of the antagonism inspired against the standardization program finds its source in the unwillingness of medical men to expose their faults before their competitors. When one considers the idealism which is traditional in the profession, when one daily beholds and marvels as I do at the skill of the average practitioner in our institutions, it is strange that this is so, and I cannot but feel that it is a natural timidity more than any fear of ridicule that makes men shrink from having their virtues extolled, or their faults exposed. One dislikes testifying in court, even though his testimony is favorable to himself. It is this same abhorrence of letting the light shine upon our works that has made it so difficult to get men to write histories and commit themselves in writing, to pre-operative diagnosis. My experience has proven that these agree in most instances with post-operative and final diagnosis, and in the few cases where such disagreement was recorded there has been quite generally a satisfactory explanation of the discrepancy.

Whatever the explanation, we have had difficulty in presenting reports and records and getting a frank, open-minded, unprejudiced discussion of them by the men interested. Yet no requirement of the minimum standard is so fraught with possibilities for the future of medicine, and so fruitful of good for the patient as this. When hospital staffs have once divested themselves of dead timber in the persons of the unqualified, who hold their position for personal or financial reasons, when the staff is small and closely organized, when the purpose and results are clearly understood, then this feature of standardization alone will stand out as the noblest achievement of our profession in this

age. The wonder is that the recognition of this need has been so tardy.

Analysis of cases is the principal assurance of the patient that he is getting what he pays for, namely the best possible service the hospital can furnish.

But, as I have said, this is not a plea for the program of standardization which has been too generally adopted to permit of any doubt as to its ultimate universal acceptance. One result of our effort in the direction of proper analysis of case records is to reveal the absolute inefficiency and uselessness of a great part of our records, and this revelation has been a wonderful stimulus to more complete record keeping.

No objection, to my knowledge, was ever raised to the regulations requiring the writing of case histories. The principal objection was to the necessity for duplication of such effort. Most cases admitted to our institution come in after examination in the office of the attending physician. The case history and record of physical examination was completed and filed at the same time and place, but the hospital demanded that such records accompany the patient's chart.

This problem was solved by the appointment of an energetic and painstaking committee, who deliberately and carefully, after frequent consultation with the staff, revised the obsolete forms in use and arranged a concise and universally acceptable form. As a consequence, many staff members have adopted the same form for their personal records and substituting their own heading for the name of the hospital, make duplicate records, one for themselves and one for the hospital files. It is true that some physicians are inadequate at history taking, and their records are often too voluminous by reason of their close attention to unimportant detail, reminding one of the nurse who charted "patient reading Pilgrims Progress". Still too much insistence cannot be made upon the fullest possible compliance with the regulations governing records, and this applies just as fully to post-operative records, daily progress notes, and the final discharge card, with its summary of the case in to-to.

The laboratory situation in the smaller hospital is a problem difficult of solution. No one can deny a need for such facilities. The problem is in making it pay.

The maintenance of a laboratory equipped

for serological, bacteriological, chemical, and histological examinations is at best an expensive proposition. Standardized, fresh, reliable, reagents must be at hand for even the occasional demand for their use. In our hospital, a charge is made for this service, exclusive of the first urinalysis and blood counts in accordance with the service rendered, and the ability of the patient to pay. As a result of this, we find that much of the laboratory work both clinical and x-ray, is done by the physician himself, especially by those physicians who are engaged in group practice and maintain laboratories equal, if not superior in size, equipment and personnel, to that of the hospital. One can readily appreciate the point of view of these men, and yet such conduct constitutes a genuine obstacle in the path of the development of such service in the hospital. It is an evidence of a lack of understanding or of sympathy with the spirit of cooperation which should demand moral and material support of the hospital, and which should characterize the ideal hospital staff. The function of the hospital is to correlate the housing and care of the patient with the work of the doctors, nurses, technicians and every auxiliary to the proper and competent treatment of suffering, insofar as it is humanly possible. In a word, service, and service entails sacrifice. Hence the minimum standard will achieve the fullness of success and acceptance only when we are willing to sacrifice our sensibilities, our petty ambitions and our financial gain for the good of humanity.

DIATHERMY IN INTERNAL MEDICINE

Diathermy is the only method whereby it is possible to apply physiologic heat to tissues beneath the surface. Edward W. Jackson, Rochester, N. Y. (Journal A. M. A., July 26, 1924), has given 1,470 treatments to sixty-one patients, divided among the various body systems as follows: Circulatory, 526; nervous, 266; respiratory, 54; joints, 352; muscular, 223, and urogenital, 39. He has found diathermy of value for the reduction of arterial hypertension, but sedative baths under carefully prescribed conditions are equally helpful. Diathermy has given symptomatic relief in many painful conditions more promptly than other therapeutic resources. It is recommended that diathermy be studied in hospitals and large clinics to define its scope, indications and limitations.

REPORT OF EFFECT OF OPERATION ON INSURANCE RISK*

A. C. Stokes, M. D., Omaha, Nebr.

I asked the Guarantee Fund Life to look up all the cases that had been operated upon before they were accepted for insurance. We examined 40,708 applications. Out of that 40,708 policyholders we had 2641 cases who had various operations before they were accepted. They were accepted with our knowledge that they had operations. Of this number we had 120 deaths. The average policyholder's years was 15.2. The average actual to expected was 71.96 per cent. Almost one-third greater than our own experience. There are various actuarial reasons for this high mortality. First of all, that measure, when I say one-third is not quite right, because our experience has changed as the years go by, and those which we accepted have changed in number, and the greater number of those come all within the last four or five years; so that changes the ratio by almost half. Actuarial interpretation of these figures advise me that our experience has increased in these cases over about 25 per cent. I know, of course, of the report that Dr. Grosvener made, and these figures do not agree with his in many respects.

With respect to detailed information. First, abscesses. We mean by abscess, any localized infection. We had 43 cases that gave us this history. In this class there were 5 deaths, actual to expected to 147.57. I will only go into detail on a few cases. Appendicitis, 1205 cases with 57 deaths and actual to expected 70.30 per cent. I am quite aware that is altogether out of proportion to some of the other reports on the same subject. We had three cases who gave a history of having had an operation for appendicitis before we accepted them that finally died of appendicitis afterwards. The first operation was just a drainage of a localized appendiceal abscess and the appendix was not removed. The appendicitis recurred and the patient was not so fortunate and died. It is well to be certain that in all appendicitis operations that at that operation the appendix was removed. Gall-bladder operations, we have tried to differentiate between cholecystectomy and cholecystotomy, but we did not succeed, so I have put them under one head.

55 policies were issued to those who had had gall-bladder operations before the issuance of the policy, 2 deaths with a percentage of 86.75. Judging from our personal experiences and results of operations for gall bladder disease we feel that a patient who has had a cholecystectomy is a much better insurance risk than one who has had only a drainage of the gall bladder. My reasons for saying this are that we do not have recurrent symptoms in nearly as large a per cent where cholecystectomy is done as where cholecystotomy is done. We had a number of others. To my surprise, we had very little experience with goitre. We had only 7 cases with no deaths in those accepted after operation. We had 307 cases that we grouped together of operations on the eye, ear, nose and throat, including tonsils. Of that number we had six deaths with actual to expected of 33.42 per cent. Fistula in ano, we had 74 cases that were taken before operation. Of that number we had 5 deaths with an actual to expected of 71.86 per cent. The presence of hemorrhoids or the operation for hemorrhoids does not seem to affect mortality at all. 302 cases of hemorrhoids with 22 deaths with an actual to expected to 70.57 per cent. We were rather surprised that we were not able to trace any case which had been operated upon for hemorrhoids as a condition preceding death from cancer of rectum. Tumors, excluding malignancy, 35 policies with 8 deaths actual to expected according to this of 71.97 per cent. Gastric and duodenal ulcer in relation to operation. Our experience has been peculiar in one thing; we have only a record of having accepted 4 cases operated before acceptance. Of that four they have been exposed now an average of 12 years, making a total exposure of 48 years, and no deaths at all. Osteomyelitis 12 policies, no deaths; hernia 287 cases with 9 deaths, actual to expected of 56.09 per cent. In this investigation after the issuance of the policy we came across fifty cases of cancer. All fifty are dead. The average time from the issuance of the policy to the time of death was 5.5 years.

AMPUTATIONS: (Before Issuance)

None of these deaths are in any way tracable to the effects of the operation.

*Outline of paper read before American Life Convention at Atlantic City.

AMPUTATIONS: (After Issuance)

Of the 13 deaths occurring from this cause, 6 were directly tracable to the operation; 1 case especially in which the leg was amputated, but death was caused from a thrombosis in the brain. It develops, however, that the head was injured on or about the same time as the amputation took place, due from an automobile accident.

APPENDICITIS: (Before Issuance)

We find that this cause, 57 deaths occurred. The records show that 3 of this number died years after the operation for appendicitis, and giving the cause of death as appendicitis. However, an investigation of these cases show that they were drainage and not removal cases. The remaining cases, 54 in number, do not show that they were in any way caused by the operation.

APPENDICITIS: (After Issuance)

Under this, 103 cases are under observation, of this number, 49 died directly from the effects of the operation, or from complications resulting therefrom. 28 died from peritonitis following the operation. It might be also possible that a great number of the above mentioned 49 cases were afflicted with peritonitis, but the records do not directly show this to be the case. One death from dilation of the heart, following the operation, 1 a few months after the operation from cancer of the colon, 1 from gall stones and inflammation of the bladder. Where the cause of death is given as cancer, gall stones, typhoid fever, etc., it seems impossible to show any connection between the death and the operation for appendicitis. Deaths from acute dilation of the heart may be tracable to the shock of the operation. However, this is a question.

CANCER: (After Issuance)

Of the 50 deaths resulting under this head, we find that 40 deaths occurred within a very short time after the operation, and it is evident that the cause of death is tracable directly to the disease necessitating the operation. The history of this disease shows very plainly that it is very difficult to eliminate the cancer even through operation, as 5 cases died a little over a year after they had been operated upon for cancer; 2 a little over 2 years after the operation for cancer. The first one occurring immediately after the operation, and the second 3 years after the operation. Under the head of cancer, the Medical Department and Examiners

should be wide awake to the danger, as our experience shows that no cases have been considered where operations for cancer occurred and a knowledge was had by either the Department or the Examiner.

CHOLECYSTOTOMY: (Before Issuance)

Under this head we had only 2 deaths, neither of which may be traced to the operation.

CHOLECYSTOTOMY: (After Issuance)

We have 16 cases, 7 of which are directly caused by the operation, 2 from pneumonia contracted after the operation; 2 from obstruction of the bowels following the operation; and 2 from peritonitis following the operation; 1 from nephritis directly following the operation; 1 from cancer following the operation; 1 from cancer and gall stones 1 year after the operation.

CHOLECYSTECTOMY: (Before Issuance)

Under this head we had 2 cases, neither of which could possibly be traced to effects of the operation.

CHOLECYSTECTOMY: (After Issuance)

Under this head we have 3 cases. The lapse of time between the date of operation and date of death in 1 case was 2 years and cause of death was given as influenza and pneumonia. 1 died shortly following the operation from pneumonia and removal of gall bladder; 1 died shortly following the operation from gall stones.

EYE, EAR, NOSE and THROAT: (Before Issuance)

9 deaths were shown as having sustained either one or the other of the above operations; 3 of the deaths were directly traceable to the operation; 2 died from meningitis following the operation; 1 from an abscess in the ear. In this latter case, an operation was performed for a mastoid. It is possible, therefore, that the cause of operation and the cause of death are very closely related.

EYE, EAR, NOSE and THROAT: (After Issuance)

Records show that there were 6 cases under observation whose policies were issued approximately 6 years after the operation. Among these 6 cases, 5 of them do not seem to show any material value, but 1 having been operated upon for mastoid, died 18 years later from brain hemorrhages. The number of years after would make the cause and effect value very slight. However, there is a question whether the operation entirely cleared up the infection, because even after these years, a hemorrhage was brought

about. Yet, on the other hand, it is possible that the reason for operation may have had no effect upon the cause of death.

FISTULA: (Before Issuance)

The deaths of 4 cases here shown cannot be traced to the effects of the operation. However, 1 was operated upon for fistula and died 6 years later from carcinoma of the rectum. The relationship between the cause of death and the reason for operation seems to be pronounced. Yet, the length of time intervening would hardly substantiate that there was any relationship whatever between the two.

FISTULA: (After Issuance)

There was only 1 case recorded under this head and cause of death was given as pulmonary embolism, which would indicate that the cause of death was entirely foreign to the reason for the operation.

GOITRE: (After Issuance)

Our records show that there were 2 such cases. The history of each show that death was caused directly by the operation. Both cases were male sex.

HEMORRHOIDS: (Before Issuance)

Under this head there are 22 cases; 21 of which seem completely free from the cause being traced to the operation. 1, however, dying of purpura hemorrhagica, 12 years after the date of the operation. It is almost impossible to trace this cause to the operation, as the number of years elapsing between the two events would render it rather difficult.

HEMORRHOIDS: (After Issuance)

Of all 11 cases here shown, 4 are directly attributed to the effects of the operation. 1 dying from influenza immediately following the operation; 1 within a few months of the operation from tuberculosis; and 1 was a suicide following the operation. If there is any relationship between the cause of death and the operation in these three cases, it exists only insofar as the diseases which necessitated the operation causing reduced vitality. The remaining 4 cases do not show that there could be any connection between the cause of death and the cause of the previous operation.

HERNIA: (Before Issuance)

9 cases are recorded, none of which show that the cause of death could be traced to the operation or its effects.

HERNIA: (After Issuance)

Of the 9 deaths here shown, 4 were directly caused from the operation; 1 to peri-

tonitis following the operation; 1 to broncho pneumonia following the operation. It is possible that the former case was due to the operation, while the latter might be derived from complications from both the disease and the operations.

The following Table of Deaths shows the difference between dates of operation and issue; and between date of issue and death; also before and after issuance of policy.

BEFORE ISSUANCE OF POLICY

Kind of Operation	Number Cases	Average Years Between Operation and Date of Issue	Average Years Between Issue Date and Death
Abscess	5	9.6	4.4
Amputations	6	7.7	3.3
Appendicitis	57	6.2	3.9
Cholecystotomy	2	4.0	3.5
Eye; ear; nose; throat	6	6.3	4.5
Fistula in ano	5	7.2	6.8
Hemorrhoids	22	8.7	5.6
Hernia	8	8.7	6.2
Tumors	2	4.0	6.5
Miscellaneous	5	14.0	7.2

AFTER ISSUANCE OF POLICY

Kind of Operation	Number Cases	Average Years Between Operation and Issue	Average Years Between Issue and Death
Abscess	11	3.5	3.6
Amputations	13	5.8	6.3
Appendicitis	103	4.2	4.5
Cancer	50	5.5	5.8
Cholecystotomy	16	4.8	5.1
Eye; ear; nose; throat	9	2.4	3.4
Fistula in ano	1	.8	4.0
Goitre	2	12.0	12.0
Hemorrhoids	11	5.0	5.6
Hernia	9	4.0	5.1
Tumors	8	4.8	5.4
Miscellaneous	65	4.3	5.6

OPERATION PERFORMED AFTER ISSUANCE

Operation	No. of Policies	No. of Deaths	Duration from Date of Operation to 12-31-23 Years	Per Cent of Actual to Expected Deaths
Abscess	12	11	1.20	2103.00%
Amputations	18	13	3.21	570.09%

Appendicitis	257	103	4.6	445.68%
Cancer	50	50	1.5	1359.88%
Cholecystotomy	24	16	2.9	547.69%
Eye; ear; nose; throat	96	9	4.8	77.30%
Fistula in ano	4	1	8.0	499.11%
Fissure in ano	1	--	8.0	-----
Fractures	6	--	8.8	-----
Gastroenterostomy	1	--	17.0	-----
Genital Organs of Females	2	--	8.5	-----
Genito-Urinary	7	--	8.1	-----
Goitre	2	2	12.0	936.83%
Hemorrhoids	24	11	5.2	334.55%
Hernia	50	9	6.4	117.28%
Hydrocele	5	--	7.0	-----
Lung	1	--	8.0	-----
Mastoid	3	--	9.7	-----
Orchidectomy	--	--	--	-----
Osteomyelitis	1	--	6.0	-----
Prostatectomy	1	--	3.0	-----
Skull	--	--	--	-----
Tumors Removed	13	8	4.1	470.06%
Turbinate Bone Removed	13	--	12.6	-----
Ulcer-Gastric or Duodenal	5	--	11.4	-----
Varicocele	6	--	8.2	-----
Miscellaneous	81	65	5.6	936.80%
	683	298	7.0*	

NOTE: * Average Years.

Total Actual Deaths	\$607,500.00
Total Expected Deaths	86,290.16
Per cent of Actual to Expected	704.02%

OPERATION PERFORMED BEFORE ISSUANCE

Operation	No. of Policies	No. of Deaths	Duration from Date of Operation to 12-31-23 Years	Per Cent of Actual to Expected Deaths
Abscess	43	5	16.9	147.57%
Amputations	166	6	20.9	39.11%
Appendicitis	1205	57	14.1	70.30%
Cancer	3	--	22.3	-----
Cholecystotomy	55	2	13.2	86.75%
Eye; ear; nose; throat	307	6	11.5	33.42%
Fistula in ano	74	5	17.1	71.86%
Fissure in ano	3	--	17.1	-----
Fractures	12	--	19.0	-----
Gastroenterostomy	--	--	--	-----
Genital Organs of Females	50	--	13.0	-----
Genito-Urinary	27	--	15.8	-----
Goitre	7	--	6.9	-----
Hemorrhoids	302	22	15.4	70.57%
Hernia	287	9	14.7	56.09%
Hydrocele	15	--	14.5	-----
Lung	3	--	19.7	-----
Mastoids	33	--	13.5	-----
Orchidectomy	14	--	16.5	-----
Osteomyelitis	12	--	25.4	-----
Prostatectomy	1	--	12.0	-----
Skull	5	--	24.2	-----

Tumors	35	2	15.5	71.97%
Turbinate bone removed	33	--	10.0	-----
Ulcer-Gastric or Duodenal	4	--	12.0	-----
Varicocele	106	--	16.5	-----
TOTALS	2802	114	15.3*	

NOTE: * Average Years.

Total Actual Deaths-----\$302,900.00

Total Expected Deaths-----423,151.75

Actual to Expected Per Cent-----73.94%

EXPERIENCE COVERING 40,708 POLICIES

Operation	Operation Performed Before Issuance Per Cent of Actual to Expected Deaths	Operation Performed After Issuance Per Cent of Actual to Expected Deaths
Abscess	.0026	.0055
Amputations	.0026	.0051
Appendicitis	.0362	.0371
Cancer	.0000	.0316
Cholecystotomy	.0025	.0088
Eye; ear; nose; throat	.0026	.0019
Fistula	.0029	.0009
Fissure in ano	.0000	.0000
Fractures	.0000	.0000
Gastroenterostomy	.0000	.0000
Genital Organs of Females	.0000	.0000
Genito-Urinary	.0000	.0000
Goitre	.0000	.0013
Hemorrhoids	.0092	.0044
Hernia	.0053	.0022
Hydrocele	.0000	.0000
Lung	.0000	.0000
Mastoid	.0000	.0000
Orchidectomy	.0000	.0000
Osteomyelitis	.0000	.0000
Prostatectomy	.0000	.0000
Skull	.0000	.0000
Tumors Removed	.0013	.0070
Turbinate Bone Removed	.0000	.0000
Ulcer-Gastric or Duodenal	.0000	.0000
Varicocele	.0000	.0000
Miscellaneous	.0035	.0277

Percent of Actual to Expected

Deaths as applied to entire

Business in Force-----0687 .1335

Total Actual Deaths; Operation Performed After Issuance of Policy-----\$ 607,500.00

Total Actual Deaths; Operation Performed Before Issuance of Policy-----312,900.00

Total Expected Deaths of Policyholders on which operations were performed both before and after issuance of policy-----4,553.959.41

Actual to Expected of Totals-----2047

POST-OPERATIVE CARE*

L. M. Stearns, M. D., Kearney, Nebr.

It is my purpose to call attention to one of the most important subjects in connection with the art of surgery that seems to be sometimes sadly neglected or indifferently managed. It is pre-operative and post-operative care. It is that part of our work that has to do with the comfort and well being of our patients following any operative procedure. It is that part of our work that makes a profound mental impression which patients carry home with them and which means so much to us in many ways. It is far better that a patient never have an operation if it cannot be followed by safe and sane aftercare.

It is not possible in the short time allotted me to cover this important subject but if I can, in going over a few of the phases, arouse a friendly discussion, many important points may be brought out that will be of benefit to us all. To the methods of treatment following I claim no originality but I have used them all and have found them efficient.

Fear plays a most important role in the general well-being of the patient. This we must not lose sight of. Cases exhibiting fear seem to do better if they can be brought to the hospital a few days before the operation. This gives them time to adapt themselves to the new environment, while a more complete examination can be made.

I believe that in many instances a small pre-operative dose of morphine alone or combined with hyoscine allays the fear and quiets the nervous tension.

We must always recognize the human element and give it due consideration and not allow that feature to be clouded by the scientific aspect of the case.

Post-operative nausea seems to be one of the symptoms which we most commonly meet and one which is very annoying to the patient. We find it most frequently following ether anesthesia. It is probably produced by the irritating action of the anesthetic, or its products of decomposition on the gastric mucosa.

It is materially lessened by using morphine and hyoscine in conjunction with the anesthetic and the free instillation of normal saline solution in the lower bowel just previous

to the operation. Following the operation it has been my habit to allow my patients a glass of two of warm soda water when not otherwise contraindicated, when this is vomited it is followed immediately by eight or ten minims of 1 to 10,000 adrenalin chloride solution in a half ounce of warm water.

The soda solution gives the bulk for the patient to vomit and cleanses the stomach. Just how the adrenalin acts I do not know. It does not appear to have other than local effect and can be repeated with the recurrence of the nausea *pro re nata*.

Tympanites following operation is a condition which many times is very severe and may progress to the point of danger. Not so many years ago it was the habit to give the patient an "honest to goodness" preparation, which completed would leave him in an exhausted condition. The bowels were moved by a calomel purge and followed by an ounce or two of salts or oil. This would successfully remove the natural protective coating and invite the full activity of harmful bacteria so that following the slightest operative trauma, tympanites of an aggravating character would occur and continue to bother the patient for a number of days. This condition was not improved by a post-operative cathartic.

Today this is much simplified. The patient is instructed to eat lightly the day before operation, unless contraindicated. The morning of operation the lower bowel is emptied by a simple enema. At the time of operation care is used in not needlessly exposing the bowel, care in placing the warm saline sponges, care in not making needless traction or inflicting needless trauma. Care in doing just what is necessary to do and nothing more. With the use of careful gentle procedures tympanites will be reduced to the minimum. The duration of the intestinal paresis will be shortened and the condition will be more amenable to treatment.

Simple dynamic ileus usually responds to pituitrin minims 4 by hypo., followed in twenty minutes by the ordinary compound enema. This may be repeated as necessary. Change of position frequently, or even the erect posture in extreme cases seems to be helpful. As soon as the stomach settles, hot water is allowed in small quantities frequent-

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ly repeated and increased until the thirst is satisfied and the tongue is moist. This is supplemented by saline enemas or drip. The second day general liquids and the third day soft diet will be the order in the average case.

It seems to me that it is needless to allow abdominal cases to suffer pain and in most instances an eighth grain of morphine or a half grain of codeine repeated as necessary, seems to be sufficient.

It is my belief that cold water given in the first 48 hrs. after a laparotomy increase the tympanites and in my experience hot or warm water in small quantities frequently repeated seem to be best.

I believe that where it is possible, particularly in operations on the upper abdomen, that special attention should be given to prophylactic measures in the mouth. Abscessed and carious teeth should be eliminated when time is not a matter of importance and the healing process allowed to be well under way before the operation is done. There is no question in my mind that sepsis in the mouth and throat has a marked influence on the production of tympanites and other more serious complications following operative work, in the abdomen.

Stitch abscesses worry patients and do not add to their comfort and sometimes give the surgeon some concern. In days gone by the skin was given much attention, so much in fact, that its powers of resistance were lowered almost to the zero mark. There was a shave the day before the operation, a scrub with a bristle brush and three or four rinsings of water. Bichloride dressings or permanganate or other antiseptic applied. Then, before the operation the process was repeated, brush, rinsings, ether, alcohol, and all was ready. In spite of this many stitch abscesses occurred. This no doubt was as potent a cause of stitch abscess as the strangulation of tissue in a stitch or the swiping of a sponge through a wound when only gentle sopping was sufficient.

It seems now that there should be only a careful shave previous to operation the day before preferably using a mild soap and water, taking care that the skin is not denuded or scuffed. This is followed by mopping the surface with alcohol and taping in place a sterile towel. At the time of opera-

tion a single coat of tincture of iodine diluted one-half is then applied and the field is ready.

Some of the newer antiseptic dyes as acriflavin are efficient and are not so apt to be followed by skin irritation as in the case of iodine.

Many times we have seen operators who have numerous stitch abscesses. They blame the suture material, which is easy and yet another operator in the same hospital may use the same brand and have no trouble. Strangulation of tissue by a tight suture or rough handling of tissue are far more frequent causative factors in the production of stitch abscess than any other.

I am an ardent advocate of the use of local anesthesia in selected cases. Post-operative distress is greatly diminished and trauma is reduced to the minimum as the surgeon has continually in mind the comfort of the patient. It seems to be ideal in superficial work and in some hands the deeper work. Hernias, and operative work about the anus are not as a rule followed by bladder disturbance when it is used.

Right here it might be said that the use of the catheter previous to pelvic operations might well be dispensed with. Voluntary urination just before operation suffices in the average case and the risk of bladder irritation or cystitis is obviated.

About ninety per cent of the post-operative backaches can be eliminated by the use of a well upholstered pad on the operating table. This should be about four inches thick and well tufted so that it will conform to the outline of the patient's back when he is relaxed. A thin pad on a hard "sway back" table is a more common cause of backache than any other thing and this symptom in itself used to give rise to much complaint.

In the removal of stitches from a nervous patient, if they are cut one day and allowed to remain until the following day they can be removed without pain. This is a suggestion that was published some time ago and is worth passing on.

In regard to dressings, it is my opinion, that they can be made a source of great irritation or comfort to the patient. They should not be of too great a bulk and should be neatly applied. In drainage cases the gauze should be twisted and placed about the drain

in a cricle so that the discharge is wicked up into the center of the upper pad. The stitches should not be cut short as they catch in the dressings and cause great concern in some patients. They should be left long and the end placed on a pad at the side of the wound.

The adhesive corset for holding the dressing in place is made as follows: Two strips of adhesive plaster an inch or two wider than the length of the incision are cut from a large roll. One edge of each piece is folded over about one-half inch and shoe hooks are placed about one inch apart close to the border. The crinolin is then loosened from the adhesive and it is placed on either side of the dressing. The crinolin is then folded over in several smooth layers so that it lies directly over the line of incision, and a nar-

row piece of bandage used to lace the dressing in place.

Utilizing the crinolin this way provides a fairly stiff support to the wound and acts very much like a splint, thus giving the patient a sense of support and comfort that is not otherwise attained.

My thought in presenting this subject is to remind us that we must not lose sight of the personal element in the handling of cases. The little things should have attention and the impressions a patient receives before or after operation remain in mind in a most vivid manner, long after we have forgotten them. Operations are regarded fearfully and anything that we can do to overcome the fear and contribute to the comfort will be as the bread that was cast upon the waters, — it will return after many days.

ROENTGEN FINDINGS IN MEDIASTINAL DISEASES*

C. H. Ballard, M. D., Omaha, Nebr.

The mediastinum being located centrally and deeply within the chest, presents some difficulties to physical examination, which can be overcome in a great measure by the use of the Roentgen ray as a diagnostic aid. Especially is this true in the early stage of mediastinal disease, before it has spread well beyond the boundaries of the aorta and heart, and in deep chested patients in whom it is not easy to elicit definite physical findings.

The most common symptoms produced by mediastinal disease are naturally those caused by pressure of the growth or tumor on surrounding structures. It is, therefore, advisable that patients suffering from symptoms such as aphonia, cough, dyspnoea, substernal pain, difficulty in swallowing, hoarseness or enlargement of the veins of the neck, should have a thorough Roentgen examination in addition to the physical.

Stereoscopic plates made by short exposures and careful fluoroscopic examination of the patient from all angles is imperative. It is also desirable in many cases to make oblique and lateral radiographs as one gets greater detail from x-ray plates than is obtained from screen examination. When there is a question of oesophageal disease,

it will be necessary to give a barium mixture in order to observe the oesophagus and note any abnormalities.

The mediastinum normally occupies a central position within the thorax and displacement of it to the right or left can be readily noted by observing the tracheal shadow which occupies its upper and central portion. The majority of new growths and tumors displace the trachea somewhat to one side or the other.

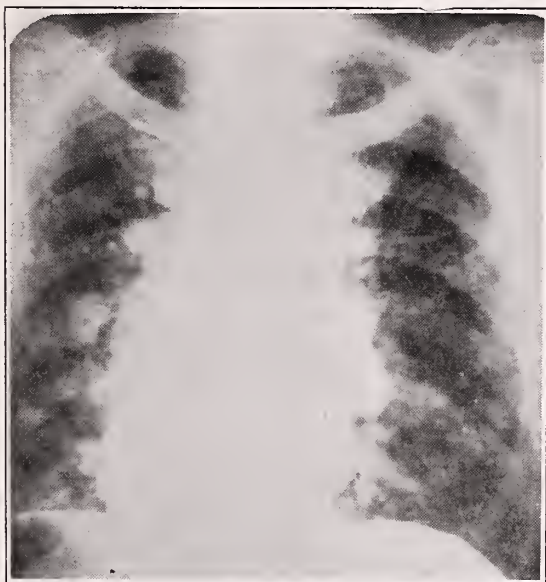
It is possible for a small tumor to produce by direct pressure, recurrent laryngeal paralysis and this may be the only symptom.

An aortic lesion has been known in my own experience to give very definite physical signs of aneurysm, so definite in fact as to be diagnosed such by competent internists. There was no x-ray evidence to corroborate this, however, and at post mortem examination the aortic valve was found to be calcified, thus accounting for the bruit resembling perfectly that heard in aneurysm.

Of all mediastinal growths lympho-sarcoma is the most common; often it appears as an area of increased density on one or both sides of the upper two-thirds of the mediastinum, projecting into the lung fields to a greater or less extent. Its outline is well defined and has a lobulated contour unless it

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is of the rapid growing, infiltrating type. If the veins are encroached upon the lungs will



No. 1. Involvement of mediastinal glands by metastatic hypernephroma.

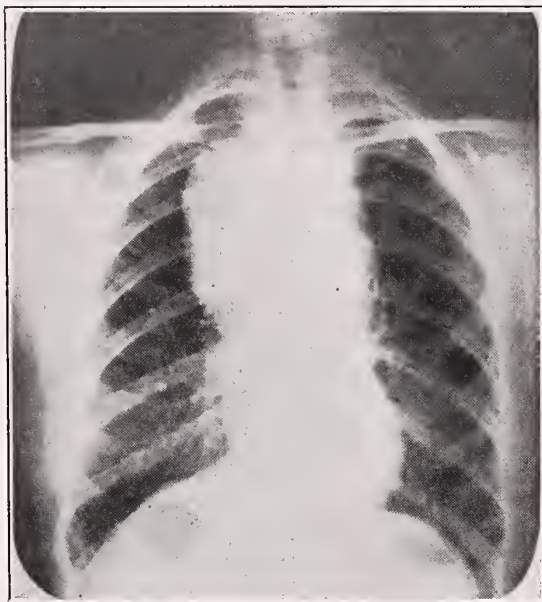
show mottling due to venous engorgement.

Substernal thyroid is shown as an enlarged superior mediastinal shadow of even density and regular contour. The enlargement is generally greatest on the right side but at times is symmetrical. I recall a good example of such a case which I radiographed some time ago at the Wise hospital. The patient was very corpulent and had been suffering from dyspnoea which gradually increased until she was unable to lie down for fear of suffocation. Radiographs revealed a well defined, symmetrical, shadow extending from the base of the neck downward to the aortic arch, with evidence of encroachment on the trachea. An important point in the diagnosis is the fact that the thyroid shadow raises and lowers with deglutition. Enlarged thymus is readily distinguished from intrathoracic goitre and there is little room for a confusion of the two from the Roentgen standpoint. Thymic enlargement is very rarely seen during Roentgen examination in adults. The typical form in infants is the key-stone shape, being larger in the upper portion, somewhat narrowed below and extending down over the aorta. It is subject to change in size during respiration, the shadow in some cases being much smaller during inspiration. It must not be confused with enlarged tuberculous paratracheal lymph nodes which occur rather frequently in early

childhood. It is easily reduced in size by x-ray treatments.

Hodgkin's disease frequently affects the bronchial lymph nodes producing a homogeneous enlargement of them. Generally the glands of the neck are also involved. Another rarer form is one which invades the lung and resembles malignancy. Again we may find it scattered throughout the lung in circular areas so slight in density that lung tissue can be seen through them. The most common form affects the paratracheal lymph nodes. Wessler states that in 50% of all cases these nodes are involved.

Aneurysm occurs in a variety of forms according to the portion of the aorta and other blood vessels involved. The shape depends on the location and amount of sacculation. They cast dense shadows with clear cut borders and lime deposits may be seen in the vessel wall. Pulsation is not a characteristic



No. 2. Aneurysm of the ascending arch of the aorta.

sign as the majority of them contain organized clots or the wall is rigid, inflexible and calcified. Hence this sign cannot be relied upon in making a diagnosis. Aneurysms of the descending aorta are not easily detected by physical examination and the importance of Roentgen findings are emphasized in these cases. The heart is not enlarged in aneurysm unless there is a valvular disease associated with it. It is possible, however, when the first portion of the ascending aorta is considerably enlarged, for it to produce an in-

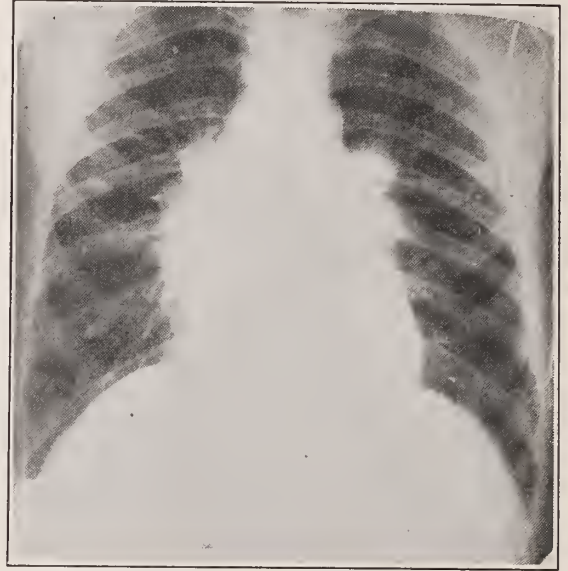
sufficiency of the aortic valve by mechanical interference. In some cases it is difficult to distinguish mediastinal tumors from aneurysm and a second examination at a later date may be necessary. Most tumors grow much more rapidly than aneurysm and will soon show an increase in size.

Syphilitic aortitis produces an elongation of the aorta thus allowing the base of the heart to rotate downward. There is also often a dilatation especially of the ascending portion and, therefore, the aortic shadow is wider than normal. This condition probably precedes aneurysm and should at once suggest a Wassermann examination, for the greatest aid to the patient must come from anti-leuetic treatment given before the aneurysm is actually formed if we wish to prolong life to any great extent.

Dermoid cyst is of rare occurrence. The shadow cast is dense, hemispherical in shape, with clear cut borders and is always located in the anterior portion of the chest. It may grow to a large size without causing noticeable symptoms. If a tooth is present the diagnosis is easily made.

The most common lesions found in the oesophagus are cardiospasm, carcinoma and diverticula. In cardiospasm the oesophagus is generally widely dilated, the lower portion conical in shape and its outline regular. Carcinoma produces a filling defect which is as a rule irregular in outline while diverticulum shows as a rounded pouch projecting from the oesophagus, most often near its upper end. All three of these lesions should be

studied by means of the barium meal and careful fluoroscopic examination from all angles. Films should be made in one or more positions.



No. 3. Enlarged mediastinal glands due to Hodgkin's disease.

In conclusion, I would like to make a plea for early Roentgen examination of cases presenting themselves with symptoms of mediastinal disease. Even when these symptoms are slight the x-ray may uncover well developed pathology. It will often help to amplify and elucidate the physical findings especially in the early stage of disease when therapeutic measures can accomplish the greatest good for the patient.

—622 Bankers Reserve Life Bldg.

INTRACRANIAL PRESSURE*

B. F. Williams, M. D., Lincoln, Nebraska.

The cerebro-spinal fluid secreted by the choroid plexus of veins in the third ventricle is passed into the lateral ventricle, also backward through the aqueduct of Sylvius into the fourth ventricle where it escapes through the foramen of Majendi into the sub-arachnoid spaces to bathe, as it were, the cortex of the brain and the surface of the spinal cord.

We believe that the cerebro-spinal fluid re-enters the circulation by means of the cortical veins, and through the pacchionion

bodies. Whether this fluid brings nourishment to the nerve cell or carries away waste products, we do not know.

The amount of cerebro-spinal fluid depends upon the rate of its secretion and the rate of its excretion. Temporarily, at least, the amount of cerebro-spinal fluid tends to increase with a rise of blood pressure; especially is this true in skull trauma or brain injury with or without fracture.

The floating of the central nervous system upon a cushion of fluid, together with the pressure of fluid contained within the confines of membranes covering the brain,

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is evidence that the brain and nervous system does not endure shocks or jars kindly.

The degree of tension existing within the fluid also suggest that vibration conducted from without through denser tissues is not well borne by the nervous system. Therefore, the degree of tension existing normally is that best calculated to absorb shock or vibration.

Observation based upon a series of cases showing alterations in cerebro-spinal tension leads us to believe that there is a constant mental state attending hyper-tension, best described by the term "anxious states" or "states of agitation."

Increase of pressure within the cerebro-spinal system transmits through the yielding nervous structure, a force that reduces the calibre of the small vessels supplying the cortex.

Compression of the common carotid artery has been employed, experimentally, to produce a semi-conscious state which, pursued still further, would doubtless reach the degree of complete loss of consciousness. If the reduction of blood supply through compression involves consciousness to this degree, reduction of blood supply to the cortex by hyper-tension within the brain cavities, must exert a similar influence.

If anxious states or conditions of agitation are but the expression of reduction in cortical functioning in which perception is dulled, and free association restricted, we can then account for this mental phenomenon upon the basis of partial starvation to the cortex through reduced blood supply from hyper-tension.

A number of years ago Kocher, recognized the symptoms of increased intracranial pressure and divided them clinically into four divisions. The first stage he designated the medical stage of compensation. He regards the effect of intracranial pressure as varied depending upon whether the compression is acute and sudden, or chronic and gradual.

Whether acute or chronic the increased intracranial pressure, however, hastens the excretion of the cerebro-spinal fluid and as brain tissue is non-compressible the pressure is transmitted to the blood vessels so that the amount of intracranial blood is lessened, and the blood in the cerebral veins under pressure readily dilate. With the ven-

ous stasis comes, anxiety, agitation, then headaches, drowsiness and ultimately stupor. Pulse, respiration and blood-pressure are not effected. It is at this stage that the first evidences through ophthalmoscopic investigation may be observed. Slight haziness, blurring of the nasal margins of the discs and tortuous veins.

The second stage is the stage of interest to the surgeon; as the intra-cranial pressure is further increased anemia of the cortex gives rise to more profound symptoms. If the presence is a local one due to fracture, the protection provided by the falx cerebri and the tentorium, which effectively separates the skull cavity into three compartments, makes it possible for one hemisphere only to be involved, and thus lessens the involvement of the vital organ the medulla.

It is this continued pressure upon the medulla which brings forth a syndrome of alarming symptoms, involving circulation and respiration through medullary compression.

Until a few years ago the ophthalmoscopic examination was considered a most satisfactory method of determining the presence and degree of intra-cranial pressure.

During the last few years the invention of a spinal manometer has proven a much more efficient instrument for determining the degree of pressure. It is true that a degree of pressure sufficient to produce choked disks reveals itself readily through ophthalmoscopic examination, but the mercury manometer or especially the later invention the water manometer gives absolute information as to the degree of intracranial pressure.

The site of election for puncture is the fourth lumbar inter-space. At times the inter-space between the third and fourth is more satisfactory, but a lumbar puncture should never be made between the second and third; for the terminal filaments of the spinal cord may pass abnormally low. This is particularly true with children where it may pass as low as the fourth lumbar inter-space before it makes its normal ascent as the child grows older.

In patients extremely active where a general anaesthetic has been administered a correction of two millimeters of mercury, should be estimated. The normal pressure of cerebrospinal fluid in adults varies from 5

to 9 and in children from 4 to 8 millimeters of mercury. In the water manometer, the adult normal readings are estimated from 80 to 150 millimeters. Beside the actual pressure much importance is attached to relative pressure readings. Of chief importance is the rise caused by artificial increase in pressure, induced by compression of the jugular vein in the neck. When jugular compression is carried on without rise in pressure as seen in the manometer, spinal arachnoid block is indicated.

Significant is the amount of reduction of pressure with the withdrawal of fluid, as an index to the amount of fluid contained in cerebro-spinal spaces normally, a withdrawal of ten cc. of spinal fluid caused the pressure to drop about 50 mm. of water.

In estimating the spinal fluid pressure the patient should be lying on the side, head in line of axis with the spine, completely relaxed both physical and mental. Muscular contraction, sneezing or coughing influences pressure upward while faintness will diminish it. A pressure of over 200 mm. of water is suggestive of intra-cranial pathology. A pressure of 300 mm. may be accepted as proof of intra-cranial pathology.

Puncture of the cisterna magna is, to my mind, permissible only in the presence of sub-arachnoid block, the result of adhesions from inflammatory process. As a point of election, while it is true, it presents an anatomical point where it may produce less pain than in lumbar puncture, it is also true that there is "normally but three cm. distance between the dura and the vital organ, the medulla". Ayres (*Arch. Neurology and Psych.* 1820).

There is also something to be said of spinal puncture as a means of securing drainage, and, therefore, of establishing a definite therapeutic value to the procedure.

Dercum, (*Arch. Neurology and Psych.*, 1920) says that "reduction of intracranial pressure intradurally produces a sort of lavage to the dural spaces; for the spinal fluid which has been removed is rapidly replaced." There is normally a balance between the pressure of blood vessels within the cord and the pressure of the surrounding cerebro-spinal fluid. It follows, therefore, if the pressure of the cerebro-spinal fluid is abnormally increased, the vascularity of the cord will

be correspondingly diminished. Less blood than normally will enter its vessels. Therefore, the rapid withdrawal of cerebro-spinal fluid is followed by an increase in vascularity of the cord and the brain.

Probably the results which follow radical spinal drainage, which are oftentimes remarkable, are the result of improvement of nutrition through a change in vascularity. The acceptance of spinal drainage, in lieu of Swift-Ellis treatment, is the result of the application of this principle to brain and cord centers long impoverished through faulty blood supply.

I would not close this paper without mentioning the method of reducing intra-cranial pressure by injecting intravenously hypertonic salt solution, or the use of glucose or magnesium sulphate. I have used a 4% solution to reduce brain bulk in a case of tumor during a decompressing operation. The administration of the solution intravenously was followed within a few minutes by a reduction of the volume of brain mass presenting through the incised dura.

In conclusion, I wish to summarize as follows:

1. Spinal fluid pressure as determined by the use of the water or the mercury manometer is the most reliable guide to the degree of intra-cranial pressure.
2. Recognition and relief of intra-cranial pressure is imperative when pressure is found by measurement to be increased and the clinical evidence of medullary compression supervene.
3. Reduction of intra-cranial pressure has therapeutic value other than its immediate relief of medullary compression. The result of increased vascularity to both cord and brain.
4. Spinal puncture is the safer procedure and to be employed rather than cistern puncture except in cases of sub-arachnoid block.
5. One may justly claim therapeutic result from lavage to dural spaces from drainage in conditions associated with hypertension.

—Security Mutual Bldg.

"Appreciation is a tonic for endeavor. It is hard to do our best when no one seems to notice or to care."

PNEUMONIA IN CHILDREN*

Floyd Clarke, M. D., F. A. C. P., Omaha, Nebr.

One of the frequent conditions the practitioner is called to diagnose, and treat, is pneumonia. It is often found post-mortem, when its presence has not been apparent during life. Seemingly the disease is more frequent in children than in adults, and the problems of diagnosis and treatment are somewhat different.

No doubt all of us have been dividing our pneumonias into two types, viz.: Broncho and lobar. Recent thought and study along this line has developed the fact that in not a few patients the differential diagnosis between the two is well-nigh impossible. Our ability to definitely state that the one case is broncho-pneumonia and the other lobar pneumonia is limited to the unusual cases only. This fact is more noticeable in the younger child and in infancy.

MacCallum's investigations concerning the pathology of pneumonia may revolutionize our conception of the disease and make unnecessary our diagnostic puzzle of broncho and lobar pneumonia. His approach has been from the micro-organism causing the disease, and teaches that each bacteria reacts on lung tissue in a certain definite manner, which is characteristic for that particular micro-organism. These pathological changes depend to some extent on the individual resistance and on whether one or more micro-organisms is present. The predominating organism and its virulence would also have to be considered pathologically. Of course, it remains for the clinician to coincide these pathological changes in lung tissue with his clinical findings.

The four most important bacteria which cause pneumonia are the pneumococcus, strepto-hemolyticus, bacillus influenza and the staphylococcus.

DIAGNOSIS: The diagnosis is not difficult if the classical picture of flushed cheek, expiratory grunt, increased respiration, dilated alae nasae, etc., is present. I know of but few other conditions where the clinician's ability to observe and his experience as a physician will serve him better than in the diagnosis of pneumonia. I am certain that it is necessary for us at times to make a diagnosis without apparent physical findings

and to base our conclusion entirely on the appearance of the patient and our clinical findings. The opposite is also true: That in certain instances a diagnosis is made on physical findings alone, the little patient not appearing at all ill.

The physical findings are difficult to elicit in children. They will not breathe deeply when asked to do so, neither will they count. For some few years it has been my habit to rather carefully percuss each child's chest, and if light percussion is used, frequently valuable information, which can be confirmed by auscultation, can be obtained. Small areas of dullness can at times be mapped out; then with the stethoscope, sometimes waiting till the little one cries and gives a deep inspiration, bronchial breathing will be heard. On other occasions diminished breathing will be heard, or at the end of inspiration, the fine sub-crepitant rale, which is so characteristic of a beginning pneumonia. No auscultatory examination is complete without the stethoscope being placed in each axilla.

In certain cases of pneumonia the physical findings are very similar to those of an ordinary bronchitis. Areas of dullness cannot be demonstrated, but there is present throughout both lungs numerous moist rales. These cases are difficult of diagnosis. Here it is necessary to consider the antecedent condition, the appearance of the patient, the duration of the illness and the further fact that most children will readily combat a bronchitis, but that pneumonia of this type is of longer duration. Too frequently this is demonstrated post-mortem.

TREATMENT: By careful attention to detail of treatment and hygiene much can be done in the way of preventing pneumonia. I well remember the dedicatory paragraph of Hare's "Thereapeutics," a portion of which is as follows: "The physician is ever a watchman, and a therapist only when necessity arises." In comparatively few cases of pneumonia in children is the physician only a watchman. Yet he must be always on the alert, lest his therapeutics become meddling. The frank lobar pneumonias occurring in the previously healthy child will ordinarily get well, whether much or little is done.

*Read before the Elkhorn Valley and Fourth Councilor District Medical Societies meeting, Madison, Nebr., Oct. 7, 1924.

These cases in children, however, are comparatively few. The ordinary case of pneumonia requires careful judgment and attention to minute detail of management. Personally, I am convinced of the usefulness of counter-irritation about the chest early in the attack of pneumonia, using one part mustard to two, three or four parts flour, depending on the age of the child. Detailed explanations are necessary. In most instances a complete mustard jacket is advisable. I am also an advocate of the general mustard pack, both early and late in the pneumonia attack. When properly applied it seems to me it is lifesaving. It is one of the best, if not the best method of reducing high temperature. I have entirely discarded the pneumonia jacket. It is uncomfortable, and interferes with the breathing effort which the baby is striving so hard to maintain.

The usefulness of maintaining a proper alkalinity can scarcely be disputed. It is my experience that the alkalis are given to children in insufficient dosage. A few years ago Dr. Dow and I did some experimental work along this line and found that from one to two drams of either soda bicarbonate or potassium citrate in twenty-four hours was necessary before the urine became alkaline. The alkalis should be given in sufficient dose until the urine becomes alkaline. The dose can then be decreased. Small doses of syr. ipecac have seemed useful. When the secretion is abundant in the chest it should be given till the little one vomits. Ammonium chloride also acts as a stimulating expectorant. It is best given in the syrup of citric acid. Potassium iodid is also useful at times. I do not believe that either ammonium chloride or potassium iodid should be given if the tongue is badly coated, the mouth foul and the abdominal distension marked.

Inhalations of steam are at times useful. It should be given for fifteen to twenty minutes in every two to four hours. If the little one struggles and fights during the administration, or perspires profusely when given, it is better discontinued.

It seems unnecessary to give digitalis, strophanthus, strychnin, etc., as a matter of routine to children whose circulation is good and whose hearts are not embarrassed by the disease. However, it has seemed to me

that the giving of whiskey has benefited these children. It serves as a food and as a mild stimulant. The total amount for twenty-four hours should be determined and that amount mixed with sufficient water and given throughout the day.

One of the frequent symptoms present is tympanites. It is my thought that milk assists in giving rise to this annoying complication. It is treated by attention to the details of diet, the application of turpentine stupes, the hypodermic injection of the posterior portion of the extract of the pituitary gland, the Murphy drip, till the solution is expelled and the injection of the emulsion of asafoetida.

Two factors are responsible for the symptom cyanosis: (1), insufficient oxygenation of the blood, due to the pneumonic process in the lung; and (2), lack of muscular force on the part of the heart to force the blood through the lungs and through the circulation. Inhalations of oxygen are useful. Oxygen should not be administered constantly. It is better given for two to three minutes in every hour. When cardiac embarrassment is apparent as manifested by an impulse beat which is pushed over to the left, or by increasing liver enlargement, and by cyanosis, blood-letting is indicated. In a recent case the abstraction of one-fourth of a pint of blood was of great assistance. Circulatory failure without cyanosis should be treated by hypodermic injections of caffeine, sodium benzoate, camphor in oil, strychnin sulphate and the mustard pack.

Convalescence in children is frequently prolonged. Tonics of iron and cod liver oil are often indicated. When resolution seems delayed and physical findings over the areas involved are apparent over a longer period than seems necessary, the application of a few dry cups over the areas affected will hasten resolution and convalescence.

SUMMARY.

1. Pneumonia frequently is found post-mortem, when its presence is unsuspected antemortem. It, therefore, behooves us to be suspicious of a possible pneumonia even through the physical findings are not obvious.
2. A favorable prognosis can usually be given in the so-called lobar pneumonia occurring in the previously healthy, robust child of about five years of age.
3. The program of "watchful waiting" will neither

er satisfy the little patient's relatives and parents, nor should it be practiced by the conscientious physician.

4. It is not essential to state whether a given case is lobar or broncho-pneumonia. The problem is

rather one of proper sick-room hygiene, good nursing and attention to minute detail of treatment.

5. Percussion of the chest will frequently serve as a guide for further examination. It is sometimes of great assistance.

INDUSTRIAL BONE AND JOINT DISABILITIES*

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The transition of an agricultural frontier to the present industrio-agricultural community has changed the social horizon and increased the complexity of medical problems. Employers in the large and small cities are subject to the Workmen's Compensation Law and are liable for compensation and the cost of medical treatment of their injured employees on the same basis as damage to their machinery. This law is a modern social experiment and its success or failure depends materially upon the integrity of the employers and the medical profession. This is recognized by most physicians and should be recognized by the employers. I am confident that orthodox physicians with very few exceptions are sound and dependable. The prevention of accidental injuries is beyond physicians and all they can hope to accomplish is the prevention of permanent disabilities following accidents.

A traumatic injury is the result of force sufficient to produce a recognizable disturbance of physical or mental function with or without a change in bodily contour. An injury from force may produce a disability immediately without other contributing factors. An injury from force may produce a disability by aggravating a pre-existing abnormal condition. An injury from force may produce a potential disability. Historically, injuries fall into three great periods: the Past, a physical deformity or physical or mental disease in existence previous to the date of the applied force; the Present, a physical deformity or physical or mental disease occurring at the time or immediately following the applied force; the Future, subsequent physical deformity, physical or mental disease which in all probability will ensue as a result of the injury.

These data and historical periods should

be observed when examining or treating any injury.

Fracture disabilities continue to play a tremendous role in permanent injuries. Permanent deformity of long bones, fibrosis and often ankylosis of joints, ischemic paralysis and in children deformity resulting from bone changes, occurs following the use of plaster of Paris without knowledge or at least without the application of knowledge. Permanent deformity, ischemic paralysis and ankylosis also occurs from the use of other material for splints.

There are five fundamental rules to learn and to adhere to in the treatment of fractures. If these rules are learned and adhered to they will reduce fracture disabilities to the minimum. 1st. Complete anesthesia for reduction. 2nd. Immediate apposition of the fractured ends. 3rd. Secure and maintain alignment. 4th. Secure and maintain length. 5th. Maintenance of immobilization of the fractured bones and contiguous area without damage to soft structures. These rules dovetail together and insure success. A high power x-ray unit, special fracture table, a retinue of servants and expensive bone instruments are not required to execute these rules of conduct. Anesthesia is mandatory. Apposition should be secured immediately in every class of fracture, preferably by the closed method which can usually be accomplished by manipulation, often aided by traction or a couple of "ice picks" or "pitch fork tines" used as prys in the fractured area. An immediate open operation in a recent fracture may be justifiable and necessary to accomplish apposition, however, operation in a recent fracture and the use of plates, screws, wire, etc., for the purpose of maintaining apposition is seldom necessary or desirable. In fractures involving long bones a study of the muscle arrangement is helpful. In the thigh for example, the anter-

*Read before the Northwest, 8th Councilor District and Holt County Medical Societies, May 7th, 1924, Long Pine, Nebraska.

ior and posterior groups of muscles are well balanced. They are attached to the ilium and inserted into the tibia. The maximum amount of pull with the minimum amount of energy may be secured by attaching the pull at the insertion of these muscles which, for convenience, is the tibia. This attachment affords a direct pull instead of a push on the distal fragment and allows for free manipulation and counter traction or pressure as is required to secure length, apposition and alignment. The arrangement of the muscles of the leg is relatively the same as in the thigh. The tendon Achilles is inserted into the os calcis. The attachment of the pull to this bone is more efficient than attachment to the distal fragment above the insertion of the tendon Achilles as is usually done. The muscle arrangement in the upper extremities corresponds, relatively, to the arrangement in the lower extremities.

A text book might be written on the treatment of Joint Injuries. There are some measures which I believe are worth emphasizing. Surgical aspiration of traumatic joint effusions relieves the pain, the pressure effect of the fluid, eliminates a culture media and shortens the period of disability. An infective arthritis may be prevented or at least minimized if foci of infection in distal organs are immediately eliminated. An ankylosing fibrosis is apt to develop in individuals past the age of 45 if their joints are encased in plaster for many weeks. This may be prevented by incorporating a barn door hinge in the plaster posterior to the knee joint and the plaster in front and sides cut away in a few days. This allows for comfort, treatment convenience and mobilization of the joint. When an ankylosis of the knee joint is inevitable, I prefer it to be in extension. I admit that there is a difference of opinion and I am basing my opinion upon personal observation. I have found that the knee joint fixed with the leg in extension affords greater function and that subsequent disability of the vertebra seldom occurs which is not the case when allowed to become fixed in flexion.

The results of skull and vertebra trauma depends upon the damage done to the cord or brain substance by contusion, laceration and compression. The brain and cord will withstand compression without irreparable consequences for only a few hours. Damage to the medullary substance cannot be rem-

edied. Treatment must be directed toward the prevention of the effects of compression and requires rapid accurate analysis and the courage to act upon the findings.

Low back pain attributed to accidents furnishes bitter controversies and conflicting speculation. The so-called sacro-iliac sprain has become so popularized that it bids fair to displace flat foot. In a series of 179 personal cases of low back pain I have not found a single case of sacro-iliac sprain. The following is a tabulation of these cases:

Low Back Pains					
Traumatic	Number Cases	Postural	Number Cases	Non-traumatic	Number Cases
Sprain:		Occupational	26	Appendicitis (retro-colic)	13
Lumbo-sacral	40	Scoliosis	4	Anal fissure	4
Strain:				Arthritis, infective	
Lumbar	12			lumbar vertebra	16
Fracture: (compression)				Erosions, cervix,	8
Lumbar vertebra	2			Hemorrhoids	8
				Myositis, infective	37
				Ovarian tumor	4
				Prostatitis	4
				Trigonitis	3
				Uretral calculus	3
				Uterine tumor	4
				Vesiculitis suppurative	2

A study of the anatomy of the sacro-iliac joint together with my clinical experience leads me to believe that the so-called sacro-iliac sprain is a rare condition. I advise that a careful search for the more probable causes of pain in this area be made before ordering a sacro-iliac belt or subjecting a patient to a surgical operation of this joint.

Many physicians who practice in the country do not have access to high voltage x-ray units, blood chemistry apparatus and technical laboratory equipment. The inexpensive x-ray unit will serve the purpose quite as well as the more expensive variety for fractures, dislocations, foreign bodies and the usual bone pathology. Clinical experience, careful histories reduced to record, thorough physical examinations, supplemented by the ordinary microscopical and chemical laboratory examinations which are within the reach of all fulfills the needs except in very rare instances. Use and not abuse of the laboratory is desirable. Test tubes and electro-mechanical devices do not successfully replace brain function. The development of brain activity is not accelerated by depending upon agents that are governed by some set formula or directed by a high geared salesmanager. Pioneer attributes are too rapidly disappearing from the practice of medicine and are not being replaced by an equivalent. Exaggeration of specialization which was the order of the day and reached

its peak during the war was not an equivalent. The doctrine, "every physician his own specialist" which is in vogue at the present time is the other extreme and is anything

but an equivalent. There is a middle ground of reason, safety and progress which can be visualized by the physician who has judgment of values.

ERYSIPELATOUS NECROSIS OF THE EYE LIDS*

H. Gifford, M. D., Omaha, Nebr.

That necrosis, with abscess formation of the lids, occasionally occurs is well enough known, but the fact that in 40 years of active eye work I have not seen a case, until this spring, leads me to think that it is rare enough to make the report of the following case of some interest to the younger members of the society.

Mrs. Q., aged 38, good record as to general health, five months pregnant. Had tonsillitis about March 12th, 1924. This ran an ordinary course and was well on the road to recovery when swelling of the upper lip appeared and vesicles appeared on its left side and spread up to the left lids. The eyelids of the right side were affected a day or two later. The swelling of the lids and the adjacent tissues increased rapidly and extremely, with extensive breaking down of the skin of all four lids; so that by the time she was brought to me, March 23rd, by her physician, Dr. M. S. Moore of Gothen-

Moore assured me, by this time the swelling had decreased considerably. On entering the hospital the area of affected skin reached, in the upper lids, from 3-16 inch below the eye-brow to 3-16 inch above the eye-lashes. A similar strip of unaffected skin was present in the lower lids between the eye-lashes and the ulcerated area. The swelling was so great that these strips of skin could not be seen until the swollen tissues above and below were pulled away in the effort to open the eye-lids. These strips not only were not swollen but were not even congested, and to my intense relief on separating the lids about 1-8 inch, which was as wide as they could be opened without causing great pain, the conjunctiva of both of the lids and the eye-ball was found to be absolutely free from congestion, without the slightest sign of discharge. The corneae, also, so far as could be seen, were normal. Microscopic slides from the throat and from the surface of the eyelids made by Dr. Moore, had shown the typical organisms of Vincent's Angina. The temperature had reached a daily maximum of 104 with a leucocyte count of 12,000; nothing else noteworthy in the complete examination. A good deal of delirium had been present for several days.



FIG. 1
Erysipelatous abscess formation and necrosis of eye lids following Vincent's Angina, March 20, 1924.

berg, the greater part of the skin of all four lids was apparently destroyed and the patient presented the appearance shown in Fig. 1; although Dr.

Under continued applications of compresses moistened with a saturated solution of potassium chlorate, which had been instituted by Dr. Moore, with the application of 10% sulphate of copper solution once a day to the ulcerated areas, the swelling and the size of the lesions rapidly decreased; and as there was still not the slightest sign of trouble with the conjunctiva or cornea I began to feel, after she had been under observation for 8 days, that the danger to her eye-sight was nearly over. However, as the crusts and superficial sloughs gradually came away or were cut away, showing an extensive area of orbicularis tissue, a hole about 3/16 inch across, in the muscle tissue of each lid, upper and lower, was found, which led into pockets lined by sloughing tissue reaching out about 1/2 inch to each side; these pockets continued to penetrate in or beneath the muscle tissue to the outer and inner extremity of each lid in spite of everything that was done. The local treatment consisted in snipping away such of the tissue as was plainly necrotic; the application of pure carbolic and at times trichloracetic acid to the full extent of the pockets; the filling of the latter with aristol; or at times with a mixture of calomel and 10% of salt; the potassium chlorate applications were changed to moist boracic ones, and a good deal of heat was used. These pockets were so extensive and so deep that it seemed as though the greater part of the tarsal plate must have been destroyed and it seemed incredible that they did not penetrate into the

conjunctival sac. Nevertheless, at no time was there any congestion of the conjunctiva nor any increase of secretion from the sac. The danger of direct injury to the ball by making applications to these infected pockets led me after a few efforts to give up the attempt at direct sterilization. They continued to spread in spite of direct drainage until they reached the outer margin of each orbit and nearly to the inner margin. Then counter openings were made and thin drains of cilkloid were passed through and through, and these were drawn back and forth and renewed frequently. Soon after this was started the pockets stopped increasing in size and the discharge gradually decreased until all was healed about April 22nd. About April 5th a reactionless swelling $1 \times 1\frac{1}{2}$ inches appeared in the median line of the forehead, reaching down to the nose bridge. This was incised and a small drop of pus was obtained from the tissue next to the bone. Within two days, however, the whole swelling was full of pus. A week later a similar cold abscess, with at first much swelling and almost no pus, rapidly changing to a large pus-pocket, formed in the left temple. Both of these cavities healed slowly without reaction under cilkloid drainage. Meanwhile typical erysipelas, started around the eyes within a few days after she entered the hospital; and in the course of ten days spread over the entire body. Blebs formed on the buttocks and a deep

Bridges, consisted mainly in heart stimulants with veronal as required, together with injections of Shermans' streptococcus vaccine. Although the Vincent's germs had been found early in the case, the cultures and slides made in Omaha from the discharge from the lids and pus-pockets, as well as from the throat, showed only haemolytic streptococci and great numbers of staphylococci. Blood-cultures were sterile.

To me the outcome was amazingly good. For weeks I was on the anxious seat, expecting every day to find the eye-ball and conjunctiva going to the bad, but the only harm done to the ball was caused by a small ulceration from exposure at the lower margin of the left cornea, which appeared toward the close of the disease. From the extensive involvement of the tissues I firmly expected that, at the best, there would be some ectropion of all the lids, but there was no ectropion at all; and, although there was slight lagophthalmus, the lids could be closed with but little effort when she left the hospital; and she has had no eye trouble in the ensuing two months. The expected son and heir gave no signs of being in the least disturbed by the exciting events of the outer world.

Whether the vaccine played any part in the outcome I cannot say. I am convinced, however, as to the value of the through and through drainage with cilkloid and only regret that I did not start it sooner.

What part the Vincent's germs played in the severe lid symptoms it is impossible to say. I know of no other case in which they have been found in disease of the lid-skin. Perhaps they may merely have accompanied the streptococci up from the nose and throat.

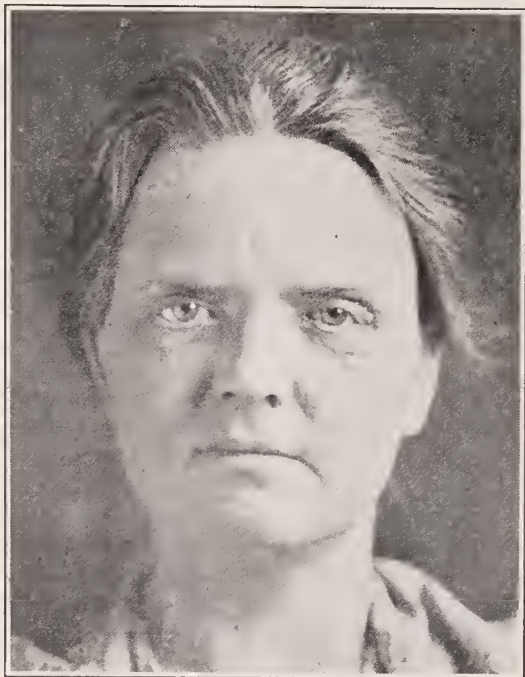


FIG. 2

After recovery from Erysipelatous necrosis of eyelids. April 28, 1924.

hard painful swelling occurred on the left hip. The maximum temperature ranged around 103 to 104 for the first few days but even while the erythema was progressing it dropped to a 100 or on some days to normal. The general course was characterized by relatively low temperature with long continued delirium and extreme itching. The general treatment, which was carried out by Dr. W. O.

HOMEOPATHY.

Chapters in history come and go and often the close of the chapter is only realized in retrospect. The chapter in medicine which deals with homeopathy is from all appearances rapidly drawing to a close.

Ask the recent medical graduate what he knows about homeopathy and in all probability all he can tell you is that one of the former schools of medicine prescribed on the theory that like cures like and that drug potency increases with dilution; that neither of these theories work out in practice and that's that. He never heard of Hahnemann's third theory of the "psora" or miasm, which was supposed to manifest itself in some form of skin disturbance. As a matter of fact this third theory never attained much credence among his most ardent followers.

The German physician, Hahnemann, first propounded his theories at the close of the eighteenth century. It was then known that quinine was a specific for malaria and the thought occurred to Hahnemann that quinine administered to the normal human be-

ing might produce a reaction similar to malaria. He tried it on himself. It did. Ergo—*similia similibus curantur*.

Hahnemann's theories gradually spread all over Europe in spite of temporary adverse legislation in Austria and later in England. In no country did these novel ideas find such fertile soil as in our own. Towards the end of the last century homeopathy was flourishing and at its close there were twenty-one homeopathic medical schools in operation in America. Few of the present generation can realize the foothold homeopathy gained among the profession in this country nor the heated debates it caused in our ranks.

Today, just two homeopathic medical schools exist in this country and last year just forty-nine physicians of the school were graduated. Homeopathic physicians who wish to be known as such are comparatively few in number. Homeopathy has come but is now obsolete.

What is the explanation of the fall of homeopathy? The main reason lies in the fact that in the light of modern scientific medical progress the theories of homeopathy do not hold water. Quinine destroys the plasmodium malariae in the blood and is not an instance of like curing like.

The power of publicity in remedying conditions is nowhere better illustrated than in its effect on homeopathic medical schools. In 1901 the American Medical Association began publishing a yearly list of medical schools in the country and their ratings. Since then the number of homeopathic medical schools has rapidly decreased from twenty-one to two. So many of the homeopathic schools had low ratings that together with the falling off in patronage they became discouraged and quit. Many a homeopathic physician realizing the true state of affairs sent his son to a regular school.

Homeopathy has made its contribution to medical progress. If it accomplished nothing else, it counteracted the practice formerly in vogue of administering large doses of drugs. Patients in many instances did as well or better on the almost negligible medication of this school. The present day tendency away from useless medication is doubtless the result of the influence exerted by the school of homeopathy.

—Editorial, Minn. Medicine.

WHEN IS STERILIZATION INDICATED FOLLOWING CESAREAN SECTION?

The answers received by John B. Swift, Jr., Boston (Journal A. M. A., July 19, 1924), to a questionnaire lead to these conclusions: No patient should be sterilized without the written consent of both herself and her husband after they thoroughly understand what sterilization entails. Every case presents a separate problem, which must be studied carefully and to which no formula will apply; but Swift feels that no woman should be sterilized on her first cesarean section unless there are definite indications other than the possibility of a second cesarean section. As the successive cesarean sections increase, opinion tends toward suggesting and eventually urging sterilization. Swift believes that the maximum number of cesarean sections should be four. Contraceptive methods, from a medical standpoint, are not reliable for preventing pregnancy. There is no strong trend of opinion either for or against the economic factor as a reason for sterilization. Swift believes further that a repeated cesarean section carries less risk than a primary cesarean section, always remembering that there is the ever present risk of surgical intervention in the abdomen, and that a cesarean section must always be considered as entailing more risk to the mother than delivery through the natural passages. It is the duty of every operator to consider not only the indications for the present cesarean section, but the possibilities of future pregnancies.

Let us not boldly decry research at a moment when its real value is beginning to dawn on us. There will never be more than a few "researchers" in any group. The important thing is to be able to distinguish pseudoresearch from useful investigation, and not to embarrass the latter in its proper sphere. Traditional criticism, says Lee, can always find sympathetic ears. It long ago became the custom to deride the physician. Montaigne and Moliere inherited it, and so have the critics of today. Let the physician beware lest in criticizing himself and his kind he forget that the chief enemy he has to fight is ignorance.—Jour. A. M. A., July 26, 1924.

To the Fat—"Don't eat. Fast."
To the Thin—"Don't eat fast."

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THE RED CROSS COUNTY NURSE IN HER PROPER PLACE

The attitude of the medical profession toward the Red Cross county nurse has been one of some delight mixed with much doubt and disappointment. This attitude was officially expressed by the House of Delegates of the American Medical Association at the San Francisco meeting in 1923 when that body went on record by the resolution reminding the American Red Cross that the war is over.

It may be said that the Red Cross county nurse has been well received by the laity and generally so by the profession, although the resolution above referred to indicates that the body passing the resolution considered the work of the Red Cross county nurse an unwonted interference with the every-day work of the medical profession. To this editor the principle of the Red Cross county nurse as an institution seems sound. In the working out of the principle the element of human fallibility is to be considered, and much, if not all of the disappointment of the medical profession in the work of the Red Cross county nurse is probably due to this one thing. Probably every person in a position of trust has uppermost in mind two things: To do good work and to make a notable record of accomplishment. The boundary of prudence in her relation toward the work of the medical profession is easily overstepped.

The nurse is not a physician, but she should be the helpmate and assistant of the physicians in her territory. It should not be the duty of the Red Cross county nurse to cart people off to specialists unless directed to do so; to negotiate half-price terms for work for people well able to pay; to waste her sympathies and energies on ne'er-do-wells, who court unmerited attention and who thrive on pauperization.

THE CANCER CAMPAIGN OF 1923-24

To those who actively participated in the strenuous campaigns of Cancer Week of two and three years ago, a brief reference to the work done in Nebraska and throughout the nation the past year will be of interest.

There were no public addresses in our state but by the use of the radio and the public press it is estimated that not less than 15,000,000 people were instructed in matters concerned with the control of cancer. All this was done without great effort and no appreciable expenditure of money.

As in years past the American Society for the control of cancer confined its efforts to the education of the public in the early signs of cancer and to the giving of advice to consult competent medical authority at the onset of suspicious signs. Some conception of the magnitude of the work of this society may be gained by the single item of distribution of 2,750,000 booklets.

The following is taken from a bulletin recently published:

During the past few years the society has come to appreciate better than formerly that the fight to reduce the death rate is going to be a long one. It is recognized that it may be many years before results will be visible in the tables of vital statistics, for, with the knowledge of cancer that now exists, the medical profession are limited. But as to the benefit of the campaign to the innumerable men and women nobody connected with the society in any capacity has any doubt. Communications from various parts of the country has shown that patients are seeking medical attention at an earlier period in the disease than was formerly the case.

A conservative attitude is held by the society respecting curative measures. Surgery with the use of X-rays and radium are endorsed but only in the hands of the skilled and experienced.

...

—Palmer Findley

THE DEPARTMENT OF PUBLIC WELFARE

A recent casual visit to the Department of Public Welfare, as the combined activities formerly loosely spoken of as the Bureau of Health is now known, made the editor wonder whether the profession of the state fully realizes what is being done in this department and what the possibilities of this service are to the general practitioner who will avail himself of the service and command it. Time and space at this moment forbid varied detail, but the following is given as a sample of activities in one division: Three hundred eight cultures for diphtheria were made in one week recently. One thousand Wassermann tests were made in one month. About one hundred slides for gonorrhoea are examined a month. Twenty-seven Widal tests were made in a recent month.

A revised and abridged "Rules and Regulations" pertaining to quarantine has just come from the press and will soon be in the hands of the profession.

IMPROVING THE RACE

"Natural Selection" is the name given by Darwin to the process which has played the major part in evolving the civilized human being of today out of the most primitive forms of protoplasm. That form of protoplasm which was best able to remain in equilibrium with its surroundings has survived. Incidentally, natural selection is helping the human race to rid itself of that troublesome vestigial organ, the vermiform appendix. The individual with the best developed appendix is most subject to elimination by appendicitis—or was under natural and non-surgical conditions of existence. Thus death weeded out the tendency to reproduce a well-developed appendix.

But today the individual's tenacity in desiring to preserve his own life is justifying the surgeon's interference with nature's plans for the race. If your appendix is long and sinuous and yearns for infection, and you have the surgeon remove it, your tendency to transmit a well-developed appendix to your progeny is unimpaired. Surgical removal of the appendix will not eradicate it from the race any more than amputation of a leg will produce a tendency to one-legged descendants. Descendants of the appendectomized will have still more need for the appendectomist.

Thus is medical science saving all of the bad specimens, not only appendiceal, but in

all mental, nervous, and physical respects. Medical science finds some way to protect the imperfect and incompetent from nature's ruthless elimination; and medical science preserves the imperfect and incompetent tendency to posterity, to further contaminate the race. It would seem that the efforts of the physician today are well enough calculated to operate to the good of the individual; but that they are clearly and powerfully opposing the development of a better, stronger, healthier, and saner human race. That is our first thought, upon a superficial consideration of the question.

But why shall we conclude that nature and evolution have ceased working when man's mind enters into the work? The operation of man's mind is as much a "natural" phenomenon as the unfolding of a flower or the falling of a meteor. There is no dividing line between "nature" and the human brain. A skyscraper is as much the work of nature as a spiderweb; a surgical operation is no less natural than the building of a beaver's dam. The same set of rigid natural laws control them all. Appendectomies are a part of Nature's big plan; and they fit in perfectly; if we cannot see it, the fault lies in our own myopia.

The human brain has substituted many methods of improving the human race, which more than counteract the harm from interfering with the operation of the law of natural selection; hygiene and sanitation, physical education. And conscious selection, as a substitute for the blind and implacable natural selection.

We can see the beginnings of it now, and we medical men can readily see how it can, and how it will develop into a universal method for the human race to take care what kind of children it permits to be born. One day which will come as definitely and certainly as the sun rises and sets, will see birth no longer a blind manifestation of providence and improvidence. Man will choose carefully both the number and the quality of individuals that will be born.

The number is no less important a consideration than the quality. Infinite multiplication is the lowest impulse of living things. Weeds and flies have for their main purpose to populate the world as densely as possible. Civilized man is beginning now to wake up to the fact that it is really not his

main aim to cover this globe three deep with struggling inhabitants.

The perfect world of the future will certainly have a far lower population than our world has at present. Human life will be a dignified conscious matter, and not the mad scramble that it now is. And, human life will be infinitely precious. It is not precious now, save to the individual himself. Were human life really of value to the mass, the mass would never permit the waste of thousands and millions of lives by preventable accidents, diseases, and strife.

In the future the community will consider each individual life precious enough to be worth saving. Each life will be indispensable to the community. And, it will require infinite skill and knowledge to care for it and to keep it safe.

This skill and knowledge is now being built up. Before it can be built up adequately, much practice and numerous subjects to practice on will be required. Today, we still have little or no real knowledge or skill regarding human life. We still blunder in uncertainty. But, today, we have courage and ambition to achieve. We have innumerable opportunity for practice. We have at our disposal (as nature has figured it out) innumerable subjects. Some of them must be sacrificed to the building up of the knowledge of the future. That is nature's inexorable way. Individuals suffer, but step by step we are building up that knowledge and skill which will be a perfect thing, and by means of which we shall be able to care for human lives at a time when they will really be precious, and do so with ease, certainty and efficiency.

—Miles J. Breuer

CONTROLLED DIAPHRAGMATIC BREATHING IN THE TREATMENT OF PULMONARY TUBERCULOSIS

(An Abstract)

Controlled diaphragmatic breathing in the treatment of pulmonary tuberculosis as advocated by Doctor S. A. Knopf of New York City, is a method of breathing which limits the excursion of the upper lung. The breathing is all done with the lower lobes and the more complete rest afforded to the upper lobes may prove helpful in combating a local process. Patients may be taught this method rather easily. The *modus operandi* is simple.

In a semi-reclining position which can be easily obtained by the use of three or four

pillows or a reclining chair, with feet extending and slightly separated, the patient is asked to relax thoroughly and to concentrate his mind on the exercise. He is then told to imagine that the respiratory movement begins in the toes of the right foot, the inhalation gradually traveling upward as far as the diaphragm on the right side, then crossing over to the left, and gradually descending during exhalation downward to the left foot. While, of course, this breathing upward from the toes to the abdomen is merely imaginary, it results in a diaphragmatic breathing and whatever quantity of air is inhaled passes mainly through the lower portions of the lungs while the upper portions, where tuberculous lesions are usually located, are put, if not at complete, at least at comparative rest.

The surest way to teach the procedure correctly is to ask him, during inhalation and during exhalation as well, to follow the physician's hand with index finger pointing as it moves in the upward direction from the right toe and over to the left side of the diaphragm, then downward to the left foot. When the physician's finger has arrived at the left side of the diaphragm, it will pause while the patient may hold his breath a second or two, and then exhale during the downward movement of the finger. The relation of the duration of the two acts should be five for inhalation and four for exhalation. With some patients ten seconds may be spent for the cycle, five for inhalation, four for exhalation, and one for stoppage between inhalation and exhalation. With other patients, particularly the more advanced cases, it may be necessary to count rapidly and shorten the cycle. Nearly all cases are able to lessen the number of respirations per minute with absolute comfort by stopping after the exhalation two, three or more seconds before inhaling again. In fact, one may leave the duration of the interval between each cycle of the respiratory movements to the ability of the patient to remain quiet before inhaling again. If he is able to hold the air after inhalation several seconds longer, he may also do so.

It will often be necessary to repeat this rest breathing procedure several times before the patient has fully grasped the *modus operandi* and does it correctly. A good way for the physician to assure himself that his patient has fully mastered and under-

stood the rest breathing is, while indicating the direction and duration of the inhalation with one hand, to place the other over the upper portions of the lungs, and thus observe whether they are at complete or at almost complete rest, and with his eyes fixed on the abdominal region see that the diaphragm does its work properly. Later on, by placing his own hands, one on his chest and the other on his abdomen, the patient may learn to know whether or not he is doing the diaphragmatic breathing correctly and giving the upper portion of the chest the desired repose.

Before leaving the patient, the physician should count the number of respirations per minute with watch in hand, and thus see what can be accomplished. This is particularly indicated with highly nervous and dyspnoeic patients, who must be shown what can be achieved with patience and perseverance in the reduction of respiratory movements. This class of patients take many short, jerky breaths per minute and seem to have no control over their diaphragm. They must be assured that they will learn with practice and may begin by stopping a few seconds after exhaling, which is the easiest part of the procedure. This mastered, they will learn to stop also a second or two after inhalation and learn the use of the diaphragm.

Patients may practice this at intervals. At first five to fifteen minutes is usually as long as one can continue. When the patient feels the need to take a deep breath, he should not be afraid to do so. Ambulatory cases may practice during the rest period. After practicing diaphragmatic breathing for some time it becomes more or less automatic and is thus of continuous benefit to the patient.

This treatment is contra-indicated when the lower lungs, pleura, peritoneum, or intestines are involved, as the excursion of the diaphragm with increased movement would have a bad effect. There are no contra-indications if the tuberculous process is limited to the upper lobes. It is especially useful in nervous patients who breath badly. The psychological effect may be excellent. It furnishes a cooperative procedure and helps you to emphasize again the value of rest which with good food and air still, of course, must be the main-stay of the treatment. Cough, pleurisy pains, and expectora-

tion should be influenced favorably by this exercise.

I would advise you to practice this method of breathing yourself. If you are convinced of its value, you may offer it to your patients. It must be given to them in an optimistic and enthusiastic manner to obtain cooperation and the necessary practice to insure its success.

—George P. Pratt

EDITORIAL PARAGRAPHS

It is said that the average rate on a ton of freight is one cent per mile.

A disease resembling meningitis has taken a toll of sixty per cent of those afflicted in Japan recently.

Scientific infant feeding and pseudo-scientific feeding are not synonymous; but some people make themselves believe so.

Infantile paralysis has been epidemic in Montana and Washington this fall. In Tacoma the schools were closed for a time.

The last of the annual meeting papers are published in this issue. Heretofore these papers have run through the current year and into the new year.

The average value of a locomotive is \$60,000, of a passenger car, \$30,000, and of a freight car \$2,500. The very best cost considerably more than the quoted figures.

Dr. George H. Simmons, for twenty-five years editor of the Journal American Medical association, now editor and general manager emeritus departed about October 1st for an extended trip to Europe and India.

The question when to display the national flag often arises in communities. The D. A. R. in a little folder on "The Flag" says: "It should be displayed on national and state holidays and historic and special occasions."

"Do not stop on the pavement" reads the warning sign along the paved highway. The unfortunate motorist has no rights that his more fortunate brother is bound to respect. The ditch is good enough for him. "Twas ever thus."

It is said that the originator of the Koch cancer cure, Detroit, has been expelled from

the regular medical organization for refusing to divulge the formula for treating cancer by injection. The exploitation for gain of any secret method of cure is unethical.

If you see anything particularly attractive in the editorial columns this month, or for that matter, any other month, remember that it did not "just happen". The wonderful cooperation of the Nebraska profession is the one thing — and modesty forbids mentioning the other.

The Ord Quiz some time ago in an article on "Fake Medical Advertising" said:

"If the home doctors would go to the people with fair statements of the equipment they have to do their work and fairly and honestly explain their experience and ability to do the things they specialize in and forget the bugbear of "ethics" it would be far better for the people at large. I believe the doctors are neglecting a duty when they fail to do so."

Who will say that this is not a half truth?

The aeroplane is a real commercial asset in Alaska. On account of the difficulties of travel, the airplane in the North makes in an hour what is usually traversed in a week. Applying this to medicine, "Aeroplaning in Alaska", says:

"None of the mining camps around Fairbanks have doctors. In case of accident—and there are many in the mining game—it is often impossible to get the injured man to the hospital or get medical assistance to him in time. This is one of the considerations why every camp, big or little, around Fairbanks has constructed a good landing field."

FORTHCOMING EXAMINATIONS FOR LICENSURE

Medical—November 18, 19, 20, 1924; State House, Lincoln.

Dental—November 17-22; Pharmacy College, Lincoln.

Nurses—November 6, 7, 8; Lincoln, State House and University Hospital, Omaha.

NEBRASKA UNIVERSITY, COLLEGE OF MEDICINE APPOINTMENTS

At a recent meeting of the Board of Regents of the University of Nebraska, the following appointments to the College of Medicine (Omaha) were confirmed:

Dr. Harold Gifford, Professor of Ophthalmology, Emeritus.

Dr. James M. Patton, Professor of Ophthalmology and Chairman of the department.

Dr. O. M. Cope, assistant professor of physiology and pharmacology.

Dr. Herman F. Johnson, clinical assistant in orthopedic surgery.

Dr. A. R. Knode, secretary of the department of laryngology.

Dr. Chas. F. Moon, instructor of obstetrics and gynecology.

Dr. A. E. Bennett, clinical assistant in neurology.

Dr. M. Grodinsky, clinical assistant in surgery

Dr. Walter Benthack, fellow in pathology.

The Regents also created the Department of Clinical Investigation and Dr. Andrew D. Dunn was appointed professor and chairman of this department.

Dr. Gifford is not retiring from active teaching duties or from the practice of his profession. He has, however, been relieved by the Board of Regents, at his own request, of the chairmanship of the department and has been succeeded by Dr. J. M. Patton, who has been associated with Dr. Gifford continuously for over twenty years. Dr. Gifford's teaching and professional career will bring honor and distinction to Omaha and Nebraska for many years to come. As chairman of the department of Ophthalmology, Dr. Gifford was called upon to assume certain administrative duties which will now be assumed by Dr. J. M. Patton. At a recent meeting of the American Academy of Ophthalmology held in Montreal, Dr. Gifford was one of the distinguished guests and read one of the principal papers.

Dr. J. M. Patton assumes the chairmanship of the Department of Ophthalmology at the urgent request of the University authorities and in order to relieve Dr. Harold Gifford of executive duties in connection with the department, this in order that Dr. Gifford may devote a larger amount of his time to hospital and private work. Dr. Patton brings to the chairmanship of the department of Ophthalmology, an unusual degree of training. He has been in immediate association with Dr. Gifford for a long term of years and has achieved nationwide distinction as a teacher of Ophthalmology and as an operating surgeon.

THE SOCIETIES

In spite of an overcast sky, forty doctors assembled at Madison, October 7th, for the Joint Meeting of the Elkhorn Valley and Fourth Councilor District Medical Societies. The meeting opened at 11 a. m. with papers "Symptoms and Treatment of Gastric and Duodenal Ulcer," by Dr. A. C. Stokes and Dr. W. A. Gerrie, Omaha, which with the spirited discussion that followed took up the forenoon. Luncheon was served by the Ladies' Aid society in the basement of the Presbyterian church. A number of the representative business men of Madison met the visiting physicians and joined in the luncheon. The doctors' wives were entertained by Mrs. F. A. Long at a special luncheon in the parlors of the same church.

At the afternoon meeting Dr. K. S. J. Hohlen, Lincoln, read a paper on "Brain Surgery," illustrated with a number of slides. Dr. Palmer Findley, Omaha, gave a lecture (illustrated by numerous slides) on "Puerperal Infection;" Dr. Floyd Clarke, Omaha, read a paper on "Pneumonia in Children."

All the papers were vigorously discussed with a promptitude that indicated the real interest of those present. It was a matter of general comment that the program as carried out was one of the best and most interesting presented in years.

Drs. H. J. Wertman and J. G. Muir of Milford,

gave a dinner to the Saline County Medical Society on the evening of September 16. The two aforementioned doctors live in Seward county and have the reputation of being fine entertainers.

Drs. Weidman, Adams and Covey of Lincoln were present and the former gave a paper on "Infant Feeding," which was enjoyed by the doctors. The Saline county doctors went home with the knowledge that the cigars and fried chicken of Seward county are "the best ever."

—Frank T. Hamilton.

The Lancaster County Medical Society of 110 members began the series of bi-weekly meetings for the year October 4th with "Men and Medicine" by Dr. A. R. Mitchell; "Streptococi Meningitis" by E. V. Wiedman; October 18th, "Points in the Prevention and Control of Wound Infection" by H. W. Orr; "Management of Surgical Shock" by Clarence Emerson; November 1st, "Chemo-therapy" by Dr. H. H. Waite; "Diabetes Mellitus" by Dr. F. L. Rodgers.

The calendar for the Society year follows:

November 15—Dinner guests of Dr. Benjamin F. Bailey.

—Dr. E. W. Rowe

December 6—X-Ray Interpretation in the Upper Gastro Intestinal Tract.—Dr. E. W. Rowe.

December 20—Guest Night. Dinner.

Nephroptosis.—Dr. O. S. Fowler, Denver.

Election of Officers.

January 3—Retro-colic Appendix.—Dr. Karl Kail.

Fracture of the Lower Third of the Leg Treated by Fixed Traction.—Dr. J. E. M. Thomson.

January 17—Guest Night. Dinner.

Relation of Heredity to Cancer.—Dr. Maude Slye, Chicago.

February 7—Chronic Seminal Vesiculitis, Diagnosis and Treatment.—Dr. A. D. Munger.

Focal Infection or What?—Dr. I. W. Churchill.

Some Studies in Glaucoma.—Dr. E. B. Brooks.

February 21—Guest Night. Dinner.

"The Influence of Heredity on the Occurrence of Cancer in Man."—Dr. H. Gideon Wells, Chicago.

March 7—Sinusitis, Its Diagnosis and Prognosis.—Dr. J. J. Hompes.

Surgical Diathermy.—Dr. Chas. Breuer.

March 21—A Constructive Program for the Prevention and Care of T. B. in Children.—Dr. Katherine H. K. Wolfe.

Artificial Feeding in Infancy.—Dr. W. O. Colburn.

April 4—Preoperative Treatment of the Hypertrophied Prostate.—Dr. Sidney O. Reese.

Observations in Diagnosis.—Dr. Stanley Clements.

Recent Studies in Urology.—Dr. Everett E. Angle.

April 18.—Function of a County Medical Society.—Dr. M. J. Breuer.

Fundamentals in the Care of Psychiatric Cases.—Dr. B. F. Williams.

May 2. Nephritis.—Dr. Geo. W. Covey

Retroperitoneal Carcinoma.—Dr. Clayton F. Andrews.

Report of the meeting of the Lancaster County Medical Society, October 4, 1924.

Dr. E. V. Wiedman reported a case of "Fatal

Streptococcic meningitis with laboratory findings in a baby two weeks old. At first the baby had been considered to be suffering from meningeal hemorrhage. However, spinal and meningeal punctures gave a definite diagnosis of streptococcic meningitis.

Dr. Wiedman also reported the study of Schick tests in a number of cases showing the results of his study of diphtheria infection. He presented twenty-four cases varying from twenty-four hours to one week old in patients from two years to twenty years of age, showing the various controls, positive and negative reactions in each class of cases. He strongly urged the administration of toxin anti-toxin and presented cases to demonstrate its power of preventing diphtheria. He also reported another series of fifty cases that he had just recently studied after three years following the administration of toxin anti-toxin. The Lancaster County Medical society went on record as positively endorsing the use of the Schick test and the administration of toxin anti-toxin to prevent diphtheria. Dr. M. J. Breuer presented a case for neurological study. He had observed the patient for approximately six months. At times certain nerve terminals would appear to be paralyzed and some would later show much improvement. The only probably cause so far determined was the result of toxemia from inhalation of "boycite" fumes. Dr. A. R. Mitchell read a most interesting paper, the subject being: "Men and Medicine." He reviewed the progress of medicine from its beginning until the present time. He continuously urged that the physicians very earnestly continue to endeavor to relieve suffering not in only a scientific but practical way and thoroughly study the benefits of the art.

— D. D. Sanderson, Sec'y.

HUMAN INTEREST TALES

Dr. Guy Seward, formerly of Neola, Iowa, has located at Fremont.

Dr. J. S. Bell, York, has been designated a major in the medical reserve corps.

The Rushville General hospital has been turned over to Drs. Crawford and Broz.

Dr. J. W. Brendel, Avoca, underwent an operation for appendicitis in October.

Dr. E. C. Henry, Omaha, spoke before the Lions Club on "Americanism", recently.

Dr. E. J. Capek, Schuyler physician, has gone on a trip to his native Czechoslovakia.

A suit for slander against Dr. G. A. Young, Norfolk, was decided in his favor in federal court.

Dr. Louis McGuire, Wisner product, after several years at the Mayo clinic, is about to locate in Omaha.

Dr. and Mrs. W. N. Anderson, Omaha, have returned from a four months trip to European clinics.

As a result of a second trial, Dr. C. L. Egbert, Hastings surgeon, was again convicted of manslaughter.

Dr. A. B. Fellers, Palisade, submitted to a major operation at the hands of his neighboring confreres October 8th.

The marriage of Dr. C. H. Campbell, Columbus, and Miss Eula May Curti, Omaha, September 11th, is announced.

Dr. R. D. Green, after several years of practice

at Holdrege, has returned to Beaver City, his former location.

Dr. C. P. Fordyce, Falls City, spent a month in the Yellow Pine basin, Ida., hunting, in late September and October.

It is said that Dr. G. I. Sellon, Broken Bow, has disposed of his interests in that city and will locate in southern California.

Dr. A. T. Bailey, who for the past year was associated with Dr. A. E. Gadbois, Norfolk, has located at Jamestown, N. D.

Dr. F. G. Vosika has moved from Howells to Clarkson and has purchased the office equipment of the late Dr. A. J. Knight.

Dr. G. G. Rice, former practitioner at Bayard, more recently in practice in Oklahoma, has returned to Bayard and opened an office.

Dr. Arthur L. Smith, Lincoln, has gone to Europe for study. He expects to put in some time at Vienna and with Thomas Lewis in London.

Dr. Meinolph Kappius, West Point, Nebr., product, recent graduate of Harvard Medical school, has taken an internship at the Boston City hospital.

Two four-bed wards have been added to the Falls City hospital and one of the wards has been endowed by Mr. and Mrs. J. G. Whitaker of Falls City.

Two north Nebraska physicians have been sued for malpractice, the question involved relating to the end results of a compound fracture of the forearm.

Dr. W. J. Arrasmith, Grand Island, attended a meeting of the resident and ex-resident physicians association of the Mayo clinic at Rochester, last month.

The City hospital, Norfolk, conducted by Dr. C. R. Mullong, has been closed. The Verges sanitarium at the same place has not been in operation for some time.

Dr. H. A. Waggoner, Omaha, has disposed of the Solar Sanitarium to Dr. J. F. Blanchard, Grand Island. Dr. Waggoner will resume private practice in Omaha.

Dr. and Mrs. C. W. Slagle, Alliance, leave for California the first of November and expect to sail November 26th on the S. S. Matsonia, for Honolulu to spend the winter.

With the recent completion of the new addition to St. Mary's hospital, Columbus, Nebr., the institution has a bed capacity of 175, four operating rooms and two modern sterilizing plants.

A malpractice suit against Dr. G. W. Ira, Lynch, involving the question of carelessness in a labor case and resultant infection, was decided in favor of the defendant by a direct verdict.

Dr. Olga Stastny after spending several years in Europe and the Near East in Red Cross and relief work, has returned to Omaha and has opened a residence office at the Beaton apartments.

Dr. A. A. Bald, Platte Center after acting as county physician of Platte county for four years suggested to the county board that some compensation might be due him. Modest doctor, he.

Dr. and Mrs. T. D. Thompson, West Point, and Dr. Warren Thompson, Omaha, made a motor trip to Kansas City the latter part of September.

Dr. E. J. Updegraff, former Omahan, for the last six months a resident of Glendale, Calif., has been seriously ill. Dr. H. L. Updegraff, son, Omaha, has recently returned from a visit to his parents.

Dr. Guy S. Philbrick, clinical director of the U. S. marine hospital, Buffalo, spent some time in Omaha recently. He is a Creighton, Nebr., product, and was an interne at St. Joseph's hospital at one time.

Dr. W. L. Shearer attended in New York City the meetings of the American College of Surgeons and of the American Society of Oral and Plastic Surgeons which were held the week of October 20, 1924.

Dr. and Mrs. Chas. E. Pinckney, former residents of Broken Bow, for a number of years medical missionaries in Batavia, Java and Bidar, India, have, owing to the ill health of Mrs. P., returned to this state.

The first annual banquet of the members of the Douglas County Hospital staff was given at the hospital October 16th. Dr. J. E. Summers gave the principal address and Dr. F. W. Heagey was toastmaster.

Dr. and Mrs. J. W. Heskett, Salem, celebrated their golden wedding anniversary September 15, with the presence of four generations of Hesketts. Dr. Heskett is retired from active practice. He located at Salem in 1884.

Dr. W. F. Lehman, medical missionary for 26 years in the Kamaroons, West Africa, is visiting in this country and has given an illustrated lecture at various points in Nebraska, notably, Madison, Norfolk, and Cozad.

As formerly stated, an epidemic of malpractice suits in Nebraska is threatened. The latest is against two physicians in east central Nebraska and it is thought that it will take \$30,274.82 to relieve the plaintiff.

Dr. R. W. Place of Bristow, Kans., motoring in North Nebraska in search of a location, plunged from a bridge in the country near Hartington, last month, into a deep ditch, got pinned under the car and fractured an arm.

Dr. A. E. Gerish, Omaha, returning from a short trip to the Pacific coast was in a train wreck in Nevada, and while somewhat injured, was the only available doctor to minister to the fourteen injured passengers during the five hours it took to get a relief train to the scene of the wreck.

Dr. Leroy Crummer, Omaha, addressed the Tri-State meeting at Milwaukee, October 28. He has also been invited to address the Kings County Medical Society at Brooklyn, New York on "Heart Emergencies", on November 14th, and will address the New York Physicians Association of New York City on November 19th. Subject of the address to be "Cardiac Neurosis".

NECROLOGICAL

William F. Jones, McCook, Nebr.; Miami Medical college, 1900; sometime mayor of McCook; not in practice; died in Colorado of organic disease of the heart, August 23, aged fifty years.

S. M. Baker, Alma, Nebr.; Eclectic Medical college, Cincinnati, 1892; practitioner at Auburn and Alma since 1892; died September 16, aged fifty-nine years.

A. J. Knight, Clarkson, Nebr.; Jefferson Medical college, 1906; practitioner at Howells and Clarkson since 1913; died at Deadwood, where he had gone for relief from hay fever, of complications incident to the former affliction, Sept., 11, aged about 43.

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CONTENTS

	Page		Page
Spinal Pressure in Brain Surgery, K. S. J. Hohlen, M. D., F. A. C. S.	457	tic Abscess Under Paravertebral Anaesthesia, Chas. F. Heider, M. D.	484
The Spleen with Reference to Surgical Treatment, Chas. E. Slagle, M. D., F. A. C. S.	462	Granular Degeneration of Cytoplasm of Hepatic Cells, A Case Report, Earle E. Boyd, M. D.	485
Case Reports Illustrating Early Diagnosis in, and the Results of Fractional X-Ray Dosages in the Treatment of, Carcinoma of the Stomach, W. L. Ross	466	EDITORIALS—	
The Internist and the Life Insurance Examination, Miles J. Breuer, M. A., F. A. C. P.	469	The End of Volume IX	486
Vivisection, Michael G. Wohl, M. D.	473	Making Doctors at the University College of Medicine	486
The Appendico-Biliary Syndrome: General Consideration, Max Emmert, M. D., F. A. C. S.	477	Medical Problems in Nebraska: Answers to Questionnaire	486
Some Fallacies of the Intraglandular Injection Treatment of Goiter, Clement L. Martin, A. B., M. D.	479	The Nineteen-Twentyfour Clinical Congress	488
Membranous Enteritis, J. W. King, M. D.	481	The Central States Pediatric Society, Rochester, Minneapolis, October 30-31	489
Syphilis of the Lung, Report of Case, Manuel Grodinsky, M. D.	483	Inter-State Post Graduate Assembly Of America	490
Nephrostomy and Drainage of Perinephri-		United States Civil Service Examination	491
		Scholarships Available	491
		The Societies	492
		Human Interest Tales	494
		Necrological	494

SPINAL PRESSURE IN BRAIN SURGERY*

K. S. J. Hohlen, M. D., F. A. C. S., Dept. of Surgery, Green Gables, Lincoln, Nebraska.

The field of brain surgery is in somewhat of a turmoil at the present time. First because of the War which upset some of our ideas as to the centers in the brain. When the final reports and statistics from the medical departments of the different countries participating appear and are digested we will probably have to re-arrange our knowledge of the physiology of the brain. Secondly, in dealing with traumata of the skull and contents there are several different factions who are advocates of certain methods of treatment. One class that advocates a subtemporal decompression at a certain period—another class that demands immediate decompression, temporal or other, and the latest class that treats the majority of traumatic

cases by spinal puncture when there is an increased intracranial pressure as shown by the spinal manometer. No doubt all these different advocates have some good in their methods. However, it leaves the subject somewhat confused for the average practitioner or surgeon when he has occasion to look into the subject. So we must live in hopes that the day will arrive when all conditions of the skull and contents can be treated in a more certain and standardized way. The aim of this paper is to be practical and clinical in nature and my purpose is to call attention chiefly to the use of the spinal manometer for the reading of spinal pressure in all brain conditions. Of course, in all brain cases it is essential to have a complete history and a thorough physical examination, urine examination, x-ray exam-

*Read before Elkhorn Valley Medical Faculty, Madison, Oct. 7, 1921.

ination, and a spinal pressure reading. My attention was first called to the spinal manometer by an address before the Lancaster County Medical Society by Dr. C. C. Rogers of Chicago, about two years ago on "Brain Surgery", and since that time I have looked into the matter from different angles due to the fact that I have had a number of cases along this line. I believe the spinal manometer is just as valuable as an x-ray picture in the determination of brain lesions. The spinal manometer was first described by Dr. L. H. Landon in 1917 and since that time its use has almost become routine. An increased intracranial pressure is shown much earlier and much more accurately by the spinal manometer in brain conditions than the findings in the eye that formerly governed us in the determination of intracranial pressure by the appearance of blurring of the retina or choked disc.

To take the spinal pressure is not a difficult matter, really being only a spinal puncture with a mercury manometer attached. Of course, there is danger in any spinal puncture if it is not properly performed. The position of choice is to have the patient lying horizontally on the side with the body well flexed. The normal reading in an adult, according to the authorities, is about seven to nine millimeters and about four to six in children.

The value lies (1) as an aid to diagnosis in showing whether there is or is not an increased intracranial pressure. (2) It makes a diagnosis positive when blood is found in the spinal fluid with an increased intracranial pressure of a brain injury even though there be no fracture. (3) In a number of acute brain injuries it is an aid as to prognosis as the intracranial pressure increases or decreases. (4) It is an aid in cases of brain tumor by increasing the cerebrospinal pressure. (5) It is of value as treatment in certain traumatic cases and in certain types of non-tumorous brain conditions such as meningitis, etc. In connection with this paper I wish to present three unusual cases.

Case No. 1.—Patient H. F., University Place, Nebraska, referred by Dr. B. F. Bailey of Green Gables on April 9, 1924, with diagnosis of "Traumatic Convulsions due to cicatricial contraction". The patient is 24 years of age, married three years. Occupation, electrician. The past history is rather interesting and I will go somewhat in detail because of its interesting features. On September 21, 1919

that is five years ago, at Menan, Idaho, he came in contact while on a pole with a wire carrying 11,000 volts. This occurred at 7:30 in the morning, and he was unconscious for twenty-five hours. He was taken to Idaho Falls at once where the attending physician reports: Diagnosis—"Injury, an extensive electric burn of the scalp and back." On October 3, 1919 the patient was removed to the L. D. S. Hospital at Salt Lake City. At this time paralysis had developed of the right arm, leg and face and the attending surgeon at Salt Lake City described the injury as, "An electric burn of the head and buttock. Burn of buttock not excessively deep. Burn of head produced a necrosis of scalp, cranium and dura for an area about 3x3 inches. Paralysis of right side." On October 29, 1919 the attending surgeon reports, "Electric burn has produced a large area of necrosis of skull and probably necrosis of cortex of brain. Area of skull was excised 2x2 inches to permit better drainage of sloughing that is going on under the skull, and with the hope that it would help to clear up the paralysis. Excision of the skull, however, has been followed by no improvement thus far. It is even questionable whether he will recover." On April 1, 1920 the attending surgeon writes: "Two operations were done including excision of necrosed bone and one of skin graft." He further makes the statement, "This has been a most unusual case throughout. Total paralysis of right face, arm and leg ensued, therefore, a large area of bone was removed from skull. This finally produced a disappearance of paralysis but because of a necrotic dura allowed a hernia cerebri which grew to the size of a large walnut. This hernia was gradually reduced until now the wound is healed with no sign of a hernia." On April 7, the same surgeon in his final report states: "Recovery was delayed by convulsions and paralysis." To the question, "Has the patient a permanent injury?" he replies, "There is now an area of brain, 3x3 inches, not covered with skull." The patient was in the hospital for nine months and then he came home and worked ever since. Dr. J. L. Landenberger of Salt Lake City was the attending surgeon and should be congratulated upon the result. The patient was referred to me April 9, 1924, and the patient's history reads as follows:

Sunday night, three days ago, while on a trip to Plainview, Nebraska, had several convulsions. Was taken to Plainview hospital and brought home yesterday. These convulsions became more and more frequent so that the time Dr. Bailey saw him they came about every five minutes. Examination showed a paralysis of right leg and arm of ten hours duration. Pupils were dilated and reacted poorly. All superficial and deep reflexes were present but apparently marked hyperaesthesia of both lower extremities. The history reveals that during the convulsions there was a turning of the head to the extreme right with rigid flexion of both upper and lower right extremities. On the left side of the head on the parietal region there was a marked depression about 3x4 inches that was covered with tense non-pulsating scar. Patient was taken to the hospital and admitted at 5:30 p. m., and from that time on until 10 o'clock he was having a convulsion about every five minutes. At 8:30 a spinal puncture was made and intracranial pressure was taken

which registered 20 mm., showing a marked intracranial pressure. Because of the fact that the convulsions were more frequent and more severe the patient was taken to the operating room at 10 o'clock that night with the idea of relieving the increased intracranial pressure and to liberate the brain tissue from adhesions. The scalp was dissected loose (this consisted practically of scar tissue) from the brain tissue. The brain was not pulsating but after relieving the tension it gradually began to pulsate again. The brain substance looked as if

paralysis entirely gone from right leg and was improving in his right arm. He had had no convulsions since the operation. Was hungry and wanted something to eat. He also recognized his family when they came in. Mentality O. K.

In two weeks time there was only a slight trace of weakness in the arm. My deduction was that the scar tissue of the multiple skin grafts had gradual-



FIGURE 1. Brain exposed, case No. 1.



FIGURE 2. Same as Fig. 1, case No. 1.

there had been hemorrhage through it. A piece of fascia lata 4x6 inches was taken from the left thigh and the fatty side placed next to the brain tissue and sutured to edge of dura. He took the anaesthetic rather poorly, requiring a large amount and it was necessary while he was on the table to give him oxygen. He was taken to his bed about 12 o'clock, midnight, and regained consciousness at five in the morning. I saw him at 11 o'clock, his speech was perfectly clear, recognized me,

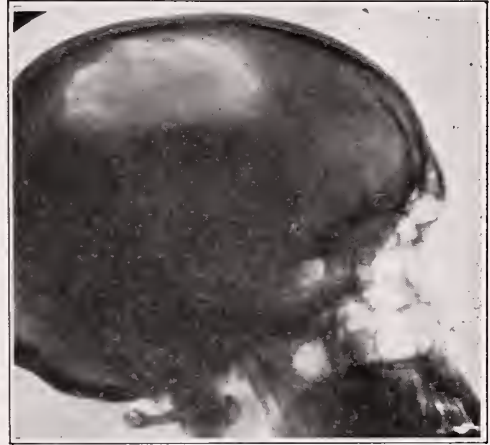


FIGURE 3. Skull defect, case No. 1.

ly contracted, decreasing the size of the cavity, thus increasing the intracranial pressure and the other factors that obstructed the circulation of the cerebrospinal fluid around the cortex. In fact, the patient informed me that he had noticed the increased pressure, the gradual contraction and the lessening



FIGURE 4. Final result, normal scalp over defective area, case No. 1.

pulsation for the past year. Twelve days after the temperature had been entirely normal he developed a rise of temperature with sore throat and we had a positive diphtheria on our hands. As a result we thought that our fascia lata transplant had sloughed. This infection soon subsided under the proper treatment. On May 23, he was taken to the operat-

ing room with the idea of covering the brain with a piece of fresh amniotic sac and closing scalp defect. In taking out enough bone around the edge of the wound in order to expose the normal dura we accidentally nicked a little hole through a very thin membrane that covered the formerly exposed



FIGURE 5. Another view of final result, case No. 1.

cortex of the brain. Through this small nick we saw a stream of clear cerebro-spinal fluid and I at once saw that we had a very delicate membrane covering the cortex of the brain with cerebro-spinal fluid between. The dura was exposed around the entire wound by excision of the skull and a number of sliding flaps of scalp were made to cover the scalp defect. In this we were more successful than we had hoped to be. Scalp healed kindly and the patient was discharged from the hospital on the 16th day of June with the wounds entirely healed and with normal scalp over the area of the defect. At the present time, September, the scalp is freely moveable and somewhat depressed over this area. The young man has left Lincoln in a Ford coupe to drive through to Idaho Falls, Idaho. He has had no convulsions since the day of the first operation.

Case No. 2.—Mr. C. G., University Place, Nebr., Age 24. Native of Greece. Occupation, dishwasher. Admitted to Green Gables May 16, 1923. Referred by Dr. B. F. Bailey with a diagnosis of "Phychosis due to pressure caused by a former injury". The family history is negative, there being no history of any mental trouble. When he was two years old he fell out of a chair and fractured his skull. Since then, has been irritable at times. Brothers say he always had a soft spot at site of injury that pulsated. Pulsation disappeared about two weeks ago. Present history: Two days ago they noticed that he was more restless was wanting hot water and said that his tonsils hurt him. He was taken to a local hospital where he offered them a million dollars if they would remove his tonsils. He became so noisy and uncontrollable that he was

taken to the Rest Cottage department of Green Gables for treatment. His brother informs me that this young man had intended to go into business with another man but somehow in the deal the other man got his money and that set the young man off. Physical examination reveals nothing unusual excepting that his systolic blood pressure is 140. His chest negative, abdomen negative. No pupillary change. Nothing wrong with the superficial reflexes. Patellar reflex increased. Right wrist increased. Co-ordination not good. Urine and blood examination negative. Wassermann negative. Spinal pressure was 18 mm. A marked increase. X-ray examination as reported from x-ray department reads as follows:

"Roentgenograms made of the skull show an absence of part of the calvarium in the right posterior portion. An area four inches in length and one inch in width, one pole of which is located one and one-half inches from the sagittal suture and at a point one-half inch behind the middle of a line from theinion to the glabella. The other pole is located one-half inch above the merging of the parietal, occipital and temporal bones." Operation on May 24, 1923. A large flap was made over the site of injury. A dense connective tissue was found bridging the defect. This was dissected out. Below this was found a large cyst the size of a goose egg. This was drained and swabbed with tincture of iodine. This was done because the cyst sac was not dense enough so that it could be dissected out. A gauze drain was inserted and the wound closed. There was marked improvement the next ten days. On May 30 my records show that he was much improved. On June 7, he was not so well; was noisy and irrational. His spinal pressure was taken and registered 20 mm. Enough cerebrospinal fluid was withdrawn to leave a pressure of 4 mm. After this he again showed marked improvement. Four days later on June 11, 1923 another pressure reading was taken, pressure registered 10 mm. Enough fluid was withdrawn to leave $3\frac{1}{2}$ mm. Records show that patient has been very quiet and comfortable and at times very rational since the previous withdrawal of fluid. June



FIGURE 6. Final skull defect, case 2.

12 the report shows "Best day he has had. Rational." The fact that his intracranial pressure had in-

creased since the first operation and he became irrational and then improved again after the relief of that pressure led me to think that I hadn't done enough surgery at the first operation. At that time we only evacuated the cyst and removed the dense connective tissue covering of the opening. So I finally decided to operate again and on the 19th day of June I removed a wide area of bone around the opening so as to expose a large area of dura beyond the edge of the bone, and inserted a small cigarette drain and closed the wound. From the pieces of bone removed I gained the impression that the young man must have had a depressed fracture when he was an infant. On June 21 records show that the drain was removed. His recovery following this operation was not very spectacular, he having days when he was very much improved and other days where he would be irrational and noisy. Improvement, however, was gradual and on July 11 a spinal puncture was done and the pressure reading was 7 mm., and again on September 1, a spinal pressure reading was made which was found normal. He gradually improved and was discharged from Green Gables on the 10th of September and at the present time is working for his brother in Denver where Dr. Bailey saw him last winter, being mentally O. K.

Case No. 3—On January 11, 1922 a baby was brought into my office, two days old. The delivery had been precipitate. The baby was perfectly normal in every respect, well developed, but with a large protuberance in the naso-frontal region, about the size of a good sized apple. Both eyes were nor-



FIGURE 7. Congenital Encephalocele. Case No. 3.

mal, no paralysis anywhere. Tumor was slightly compressible but upon compression the child became restless. The tumor was negative to transillumination test as to the fluid contents. The baby was sent to Dr. Rowe for x-ray examination and the report is as follows:

"Stereoroentgenograms were made showing the head in lateral position, also flat plates showing the head in antero-posterior position. There is a lack of bony continuity in the frontal bone. This begins above the glabella in the frontal suture and extends downward and then backward into the floor of the anterior fossa, separating the ethmoidal plates. I

believe that there is a connection between the interior of the cranium and the protuberant mass. These findings are characteristic of a congenital malformation caused by a lack of fusion in the formation of the skull."

In order to contradict some of the numerous non-believers in prenatal markings of a child, the moth-



FIGURE 8. Congenital Encephalocele. Case 3.

er tells a story that during the time she was carrying this child their two boys were fighting out in the yard and one took a brick and hit the other in the naso-frontal region causing a wound and hemorrhage. This accounts for the child's condition due to fright of the mother from seeing this injury. The child was operated on at the St. Elizabeth's hospital about three weeks later, before the District Meeting of the American College of Surgeons. The incision was made and the tumor resected, free down to the opening in the skull. The sac and surplus brain tissue was excised and the defect of the skull closed by closing over with fascia. The wound healing promptly except a small area which gradually healed and the child made an uneventful recovery up to the time they left the hospital and several weeks later. This case was so pleasing to myself that I was overzealous in my interest for the future of the child so that it struck me that there really should be a protecting pad over the place where the bone defect was so that I had an eye, ear, nose and throat man's head light band made with a plate, from the frontal to the occiput region running antero-posterior. The band was applied by the local doctor and the family and in due time the report came that the child was not doing well and that it was showing signs of meningitis. There was a widening of the longitudinal sinus suture. The band was removed at the onset of these symptoms and the local doctor was advised to do a spinal puncture to relieve the pressure. This was not done. A week later April 1st, I took Dr. C. C. Rogers, of Chicago, who happened to be in the city, out to see the child and to get a practical demonstration of the spinal manometer. Dr. Rogers was of the opinion that we had an external hydrocephalus. He made a spinal puncture, the manometer showing the pressure as 20 mm., when the child was quiet and 30 when it was crying! The normal pressure of this child would have been 4 to 5 mm. Dr. Rogers removed 4 cc., of spinal fluid and told me he would have

rather removed 10 cc., but as the parents were a little obstinate in letting us do this he did not remove more. He advised tapping the spine every other day and gave a prognosis that the child would get well. On April 3, I removed 8 cc., of spinal fluid and the pressure came down to 10. After these punctures the child was improved. On the day of the last puncture we were confronted by a fighting woman an

aunt of the parents, who was very much against our experimenting on the child. There was a very wordy combat with the attending doctor, a nurse and this woman. The next morning the local doctor called me and informed me that he had been called, that we need not come anymore. This child lived about six months afterwards, developing a large hydrocephalus.

THE SPLEEN WITH REFERENCE TO SURGICAL TREATMENT*

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Those of us who received our medical school education a good many years ago, recall perhaps, that sometime during the course some instructor mentioned the fact that the human individual has a spleen; that it is located somewhere in the upper left abdomen; that it might just as well have been located somewhere else in the body as where it is; and that if it had any important function, no one seemed to know just what it was. This in substance represents about the average amount of practical information that was given the regular medical student not so very many years ago.

The object of this paper, therefore, is to bring to the attention of the general practitioner certain facts regarding the relation of this organ to some of the more or less complex syndromes of which their relation to the spleen is pretty well established but as a rule does not receive due consideration.

ANATOMICAL CONSIDERATION

Let us consider first that the spleen is primarily an embryonic organ; that it makes its appearance very early in uterine life, about the fifth week; that it develops rapidly so that at birth it is proportionately larger than other organs; that soon after birth it re-establishes a normal ratio as to size; and later in life it tends to show some signs of atrophy, so that we might say, according to Gross and others, that the spleen probably has what might be termed "age characteristics". I ask you not to understand me as saying that the spleen is a retrospective organ, as the outstanding fact in an adolescent organ is the reduced blood supply; yet the spleen is not an essential to life, and when diseased it has great potentialities for harm.

Every red blooded animal has a spleen. Lower forms of life without spleens have only white blood cells. The spleen in every

animal is generously supplied with arterial blood. The human spleen receives its blood supply very early from the arterial circulation through the celiac axis along with the stomach and liver and of these it receives a proportionately larger amount. The blood leaves it through the splenic vein, which becomes a part of the portal vein on its way to the liver and of which it contributes more than one-third of the whole amount. The spleen is the one organ in the human body in which the blood comes directly in contact with the constituent pulp, whose cells are essential to the straining action of the spleen.

The spleen has a small amount of non-striated muscle fibers which, the same as in other parts of the body, has the power to originate contractions and like the stomach and intestines does originate rhythmic contractions during the digestive period.

FUNCTIONAL CONSIDERATION

Functionally, let us consider first that the spleen is not a necessary adjunct to adult life. The few known functions that have been accurately determined are readily accepted and carried on by other organs of the body when once it is removed. The spleen has no known internal secretion. It is closely associated in function with the liver.

Kahn gives us the following classification of splenic functions:

1. Blood formation.
2. Blood destruction.
3. Role in iron metabolism.
4. Regulation influence on blood producing organs.
5. Concern in digestion.
6. Cholesterinogenic activity.
7. Internal secretion.
8. Detoxication.

The spleen is a leukopoietic organ; it functions markedly during embryonic life; it re-

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ceives the largest blood supply from the celiac axis; its return circulation furnishes one-third of the blood to the portal vein.

The blood supply of any organ gives a hint at least as to its function. The first blood in the fetus is white. A little later the red cells appear which we might assume come during the development of the spleen. The splenic venous blood contains seventy times as many white cells as the splenic artery and many times more than any other vein in the body. Naturally, we might conclude that the increase is due to some action of the spleen while it is passing through.

Mayo says: "Intra-uterine life, up to the fifth month, the spleen, the liver, the lymphoid and adenoid structures of the body actively participate in the formation of the cellular elements of the body, both the white and red, a function which, so far as the red cells are concerned, is usually lost by the liver and spleen before birth, to be carried on by other hemolymph bodies and the bone marrow." After birth the spleen in health undoubtedly produces white corpuscles and it is believed by some observers that in life emergencies it may produce red corpuscles, as for instance after severe hemorrhages.

The spleen has always been accredited the function of destroying certain red blood cells. Eppinger says: "There is a double way open for the red blood cells after entering the splenic artery to gain entrance into the pulp structures. One way is through the pulp artery of the splenic sinus and the other way is directly into the pulp along unchanneled paths".

Those which go the first way leave the spleen unchanged; those which go the second way and invade the tissue perhaps later become destroyed by the macrophages. The pulp substance, therefore, serves as a place where the red blood cells are discarded and undergo destruction by phagocytes and the macrophages. The spleen, therefore, has a selective action in that it selects the red cells that are to undergo destruction and those that are to continue in the circulation.

The spleen is richly supplied with iron, a store house which is liberated from decomposition of the blood tissue, and a capacity which is taken up by the liver and bone marrow after splenectomy.

It has a stimulating influence on the blood producing organs for we know that splen-

ectomized dogs recover slowly after hemorrhage.

It gives to the blood stream during active digestion gastric enzymes, especially pepsin, a storehouse for protein products and glycogen movements of the liver, and as expressed by one author," it acts as an abdominal heart to supply blood to the stomach and liver during digestion."

In dwelling on its detoxication function Rowntree compares the combined action of the spleen and the liver to the kidney as he believes that the spleen acts as the Malpighian body and the liver as the tubule of the kidney, the one straining out certain toxic substances from the blood and the other acting on the material brought to it from the spleen. The material which is strained out of the blood by the spleen is carried through the portal vein for further action to the liver which has the power to destroy micro-organisms and to detoxicate poisons as well as to eliminate through the bile function.

In summary, let us conclude that anatomically, the spleen must be expected to play some important part in the human economy because of its blood supply, if for no other reason than that it is primarily an embryonic organ; that it is functionally more or less obscure during adult life; that it does play a part in the destruction and formation of the cellular elements of the blood; that its function is readily taken up by other organs in case of its removal; that it does not seem to be inclined to take on this function so long as it remains in the human body even though it does seem to have lost its own function; that it exerts some influence on the digestion during that process; that it has no known internal secretion and probably has no function along that line because it is not connected up with the nervous system in the same way as other organs of known endocrine function; that it has a markedly detoxication function which it performs diligently but that it may in certain cases become overwhelmed, exhausted, and a menace rather than a benefit to the health of the individual.

PRACTICAL CONSIDERATION

For practical consideration I wish to call your attention to certain clinical entities, with and without splenomegaly, and in which the spleen is given a secondary consideration or no consideration at all.

GASTRIC HEMORRHAGE. To just what extent a splenomegaly of slight degree may be held responsible for some cases of gastric-intestinal hemorrhage that is otherwise unexplained is not known, but present day conclusions are at least sufficient to allow the spleen some consideration.

Every surgeon of experience, sometime in his life, especially before the days of the x-ray, has had some patient come to him with a history, having gastric hemorrhage along with other symptoms, such as pain, loss of weight, blood in stools, tenderness over upper abdomen, hunger pain and in fact all the classic symptoms of gastric ulcer, but on opening the abdomen no ulcer was found. Possibly even then the surgeon might have failed to explore the spleen.

Occasionally someone dies suddenly from gastric hemorrhage with no history of any previous symptoms whatever. Possibly an autopsy might have revealed some degree of splenic enlargement.

CIRRHOSIS OF THE LIVER. Griffin assumes that probably every case of marked splenomegaly is associated with a certain degree of cirrhosis of the liver. Others have offered evidence to the effect that every case of splenomegaly of moderately long standing is associated with a certain degree of cirrhosis of the liver.

Occasionally a case is observed in which it is impossible to determine whether the splenomegaly or the cirrhosis is the more marked and in which the pathological changes in the spleen and the liver seem to go hand in hand. This apparently seems to be true in either biliary or portal cirrhosis. Balfour says: "It has been pointed out by various observers that the spleen is particularly liable to set up cirrhotic changes in the liver with the sequence of events as follows: The spleen acts as a sieve in catching and destroying pathogenic bacteria; these bacteria may be of such a character or number that the spleen becomes permanently disabled in its function and although the bacteria responsible for the original infection have disappeared, the spleen, because of its intimate connection with the liver anatomically and physiologically may deliver direct through the splenic vein, toxins which sooner or later set up cirrhotic changes in the organ. When this occurs splenectomy removes a true focus of infection with arrest-

ed progress of the cirrhosis unless it has already become too far advanced."

The point I wish to emphasize in connection with cases of hematemesis due to supposed latent cirrhosis is that hemorrhages are due to some primary pathological condition elsewhere in the body, and the spleen, because of its close association with the liver, should always be taken into consideration.

INFECTIOUS SPLENOMEGALY. This class of enlarged spleens brings to our minds certain forms of infection such as tuberculosis, syphilis, malaria, typhoid, and certain other chronic recurrent disorders as recurrent tonsillitis, recurrent furunculosis, and certain forms of endocarditis as mentioned by Giffin.

A diagnosis of tubercular splenomegaly might be the cause of the controversy. Many are inclined to believe it is always secondary to tubercular infections elsewhere in the body. Some cases have been reported in which no other lesions were found elsewhere in the body. Rendu and Widal present as a syndrome characteristic of the disease, polycythemia without leukemia and cyanosis as the predominating features. Mayo's present some cases confirmed by operation in which polycythemia was not present.

Balfour says a diagnosis of splenic tuberculosis can be justifiably assumed in the case of a patient with an otherwise unexplained chronic splenomegaly, who has a quiescent or active pulmonary tuberculosis.

Syphilitic splenomegaly is characterized by anemia, positive Wassermann test and especially failure to improve under antisymphilitic treatment. Specimens after splenectomy have shown the spirochaetes to be lodged in the walls of the vessels.

The spleen like any lymphoid tissue may harbor infections which may produce recurrent constitutional disturbances much in the same manner as infections are harbored and disseminated by the tonsils.

HEMOLYTIC ICTERUS. Most every community at some time or other has had its chronic jaundice case, one who otherwise enjoys very good health. Inquiry into the history of the case develops the fact that it is not the ordinary type of obstructive jaundice for the patient lacks the itching skin and the two cardinal symptoms, clay stools and bile in the urine.

If we conceive in our minds the picture of the ordinary case of common duct obstruction due to stones we see the case accompanied by pain, chills, and fever, jaundice constantly increasing, clay colored stools, bile laden urine, and as a rule an enlarged, tender gall-bladder, and as Mayo says, in 85 per cent of the cases a rounded tender gall-bladder is to be felt.

One should not conflict this form of common obstructive jaundice with the hemolytic jaundice or as it is often called "chronic biliousness." Mayo says these cases always show a definitely enlarged spleen and a moderately enlarged liver.

So called crises occur with exacerbations of the jaundice in which there are malaise, moderate fever, and sometimes chills with increased tenderness over the spleen and liver.

It was at one time thought that all the red blood cells in the body were destroyed and replaced in the course of a week. Ashby has demonstrated that the red cells may live for thirty or forty days and perhaps longer. Perhaps the enlargement in hemolytic jaundice is a hypertrophy from overwork. Pigment gall-stones are a productive complication; at any rate cholecystectomy does not cure the case whereas splenectomy does.

SPLENIC ANEMIAS. In splenic anemias the condition seems to be one of under-function rather than over-function. In the conflict with disease, while the whole body tissue suffers, the spleen seems to be at the brunt of the battle. As the normal tissue of the spleen is destroyed it is replaced by fibrous tissue and the organ enlarges in an attempt to keep up its struggle against the disease. Finally the spleen decompensates and instead of being a help it becomes a menace and may be a focus from which the disease is better able to attack the liver and other organs. The spleen should be removed before hepatic cirrhosis has developed.

Medical treatment for splenitis so far has been of little or no permanent benefit. Surgery offers some relief. Splenectomy in all forms of splenomegaly under certain conditions have brought some relief. All forms of splenic anemia and leukemias have been subjected to splenectomy and in most cases with some good results. Splenomedullary leukemia in which the leukocyte count is very high is an unfavorable condition and the

mortality is high but if the leukocyte count is reduced the case may be treated surgically with no more risk than other cases of similar nature.

Recently two cases were operated on for purpura hemorrhagica at the Mayo Clinic with good results so far. Musser of Philadelphia also reports two cases. It would seem that the field for splenectomy in the last two or three years has broadened very markedly.

BIBLIOGRAPHY

Krumbhaar, E. B. and Musser, J. H. The Relation of the Spleen to Blood Destruction and to Hemolytic Jaundice. *Jour. Exper. Med.*, Jan. 1st, 1916

Mayo, W. J. The Relation of Chronic Fibrosis and Thrombophlebitis of the spleen to Conditions of the Blood and of the Liver. *Archives of Surgery* ii, 1921, 185-195.

Desjardens, A. U. and Ford F. A. Hodgkins Disease and Lymphosarcoma. Section of Radium and Roentgen Ray Therapy, Mayo Clinic.

Collected Papers of the Mayo Clinic, Vols., 1905-9, 1914, 1915, 1916, 1917, 1918, 1919, 1920.

Personal Communication, A. E. Bennett, Philadelphia General Hospital.

Personal Communication, H. Z. Giffin, Mayo Clinic.

Inlow, W. DeP. The Spleen and Digestion. *Amer. Jour. of the Med. Sciences*, Jan. 1924, No. 1 vol., clxvii.

Giffin, H. Z. and Szlapka, T. L. The Treatment of Pernicious Anemia by Splenectomy. *Jour. of Amer. Med. Asso.* 1920, lxxvi 290-295.

Giffin, H. Z. Hemoglobinuria in Hemolytic Jaundice. Section on Medicine, Mayo Clinic.

Brown, G. E. and Giffin, H. Z. Studies of Capillaries and Blood Volume in Polycythemia Vera. *Amer. Jour. of the Med. Sciences*, Oct. 1923, No. 4, vol. cixvi, 489.

Pearce, R. M., Austin, J. M. and Musser, J. H. The Changes in the Blood Following Splenectomy and Their Relation to the Production of Hemolytic Jaundice. *Jour. Exper. Med.* 1912, xvi 758.

Ashby, Winifred, Blood Destruction in Pernicious Anemia. *Jour. Exper. Med.* 1921, 34, 147.

Gray, H. On the Structure and Use of the Spleen. J. W. Parker London 1854, pp 380.

ATROPINE

Atropine administered in small doses (0.5 mg.) intravenously or subcutaneously slows the pulse. When given intravenously in higher doses than 0.5 mg., it exerts a paralyzing action on the vagus and accelerates the pulse. When given subcutaneously in higher doses, it retards the pulse at first and then accelerates it. In all cases, the slowing of the pulse is to be attributed to the action on the vagus. The blood pressure has a tendency to fall after the administration of atropine by the intravenous route.—O. Platz, *Klin. Wochens.*

CASE REPORTS ILLUSTRATING EARLY DIAGNOSIS IN, AND THE RESULTS OF FRACTIONAL X-RAY DOSAGES IN THE TREATMENT OF, CARCINOMA OF THE STOMACH

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The following cases with brief case histories and Roentgenograms, are presented as examples of the treatment technique used and the results obtained in treating carcinoma of the stomach with x-ray by the fractional dose method.

The first case will illustrate a very early carcinoma of the pylorus of the stomach.

Mr. B. of Hayes Center, Nebr., age 60, merchant, married. Consulted me July 10, 1919.

CASE HISTORY

Chief Complaint, stomach trouble.

History of present illness: Soreness in epigastrium in mid-line. Soreness extends to right and left under costal cartilage. Soreness is not constant but troubles more if he eats heartily for two or three days. If he eats lightly for several days, the soreness eases up some, but does not go away entirely. A hearty meal makes him feel bloated and full immediately after eating. This feeling usually continued for 1½ hours. At times, it continued from one meal to another. Eating fried foods and meats will increase the bloated feeling. No other kind of food eaten, causes the bloating. Sodium bicarbonate taken will cause him to belch gas and relieve the fullness of the stomach. Gas belched has no taste. He rarely ever spits up any food when he belches. An overtired condition causes soreness of the stomach to be worse:

Personal Medical History: As a child—negative. As an adult—at age 20, he had bilious, intermittent

la grippe two or three times, and the present illness. His present illness has troubled him more frequently during the last four or five months than it did formerly.

Physical examination: Temp. 98, pulse 72, systolic blood pressure 110.

Gastro intestinal examination: Films show a filling defect of the pylorus. Also a 6 hours and 45 minutes barium residue.

Diagnosis: Very early cancer of pylorus of the stomach.

Treatment and result: This patient was given fractional x-ray dosages. Treatment every day for fifteen days, then every other day for twenty days. In all 1012 milliamperes minutes were given. His improvement was gradual. He was last examined Nov. 24, 1919, four months after his first treatment. At this time he was greatly improved, having gained about 15 lbs. in weight, and rarely had any distress after eating. This patient was heard from Jan. 1, 1924, four and a half years after his treatment, at which time he was well.



FIGURE 1. Case 1. Mr. B. July 15, 1919. 15 minutes after meal. Radiograms show filling defect of the pylorus.

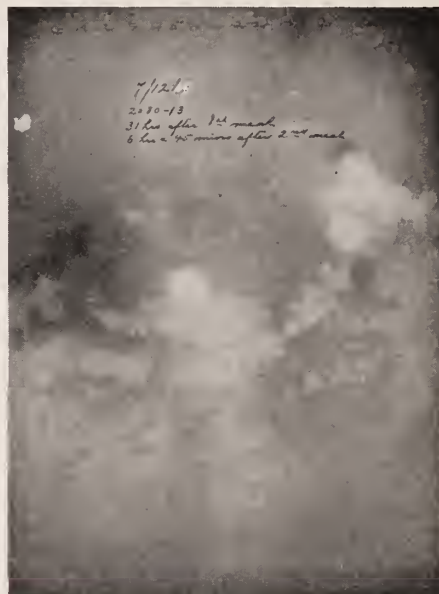


FIGURE 2. Case 1. Mr. B. July 12, 1919. Radiograms show 6 hours and 45 minutes retention of barium meal.

Diagnosis: Carcinoma of the pylorus of the stomach.

The second case is that of an early carcinoma of the greater curvature of the antrum of the stomach.

Mr. G., age 53. Was referred for x-ray examination of the gastro-intestinal tract Oct. 21, 1923. His physician, Dr. McGee, had made a clinical diagnosis of carcinoma of the stomach.

CASE HISTORY:

Chief complaint: 1. Eructations of food. 2. Loss of weight. Eructation of food occurs as long as four or five days after ingestion. Gastric trouble com-

fever. He was sick for about three or four months. Recovery was complete. He has been well since 20 years of age, with the exception of acute attacks of

menced about eight months ago. No pain in stomach. Greasy food disagrees. During the past four months he had lost 15 lbs.

Physical examination: Abdomen, negative, except for some tenderness in left side over region of descending colon. X-ray examination reveals filling defect of pyloric end of stomach, also a 31 hours barium residue.

Diagnosis: Early carcinoma of the pyloric end of the stomach.

At Dr. McGee's request I undertook x-ray treatments of his condition. This patient was given x-ray treatments on five consecutive days. After an interval of ten days he was again given treatments for five consecutive days. Following the first five days treatment, he was given diathermy through the stomach every second to third day. Diathermy treatment was continued for a period of three months.

X-ray examination of Mr. G.'s stomach on Feb. 22, 1924, reveals the filling defect about the same as of Oct. 22, 1923.

This patient was last seen on May 5, 1924, at which time, he stated, he felt entirely well, could eat corned beef and cabbage, roast pork or anything he desired, without the least bit of stomach trouble. He has regained his normal weight and strength and feels fine.

Technique used in foregoing case of Mr. G. was:
Spark Gap—11 inches. (Kilovolts—94).

Milliamperes—5.

Time 25 to 30 minutes.

Skin distance 14 inches.

Filter— $\frac{1}{2}$ millimeters of copper, 1 millimeter of aluminum, and $1\frac{1}{2}$ inch felt.

In all he was given 1450 milliampere minutes.

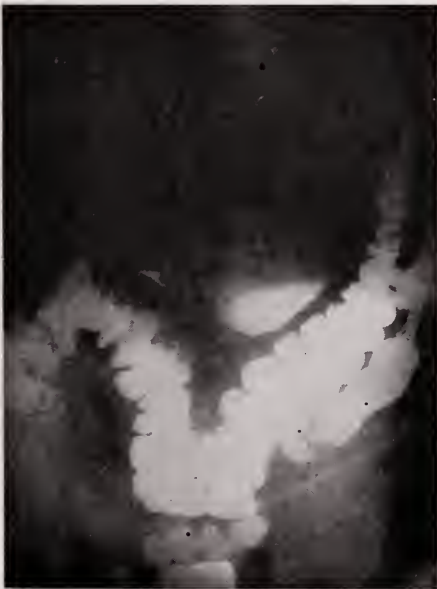


FIGURE 3. Case 2. Mr. G. Oct. 22, 1923. Radiograms show 30 hours and 35 minutes retention of barium meal. Also filling defect in antrum of the greater curvature of the stomach.

Diagnosis: Early carcinoma of pyloric end of the stomach.



FIGURE 4. Case 2. February 21, 1924. Radiograms show 7 hours and 40 minutes retention of barium meal. Also filling defect of the greater curvature of the antrum of the stomach about as of Oct. 22, 1923.



FIGURE 5. Case 2. February 21, 1924. Radiograms show stomach empty 23 hours and 45 minutes after ingestion of barium.

The third case is that of a carcinoma involving the greater curvature of the fundus of the stomach.

Mr. H., age 52. Farmer. Consulted me on July 24, 1917.

CASE HISTORY:

Chief complaint: 1. Stomach trouble. 2. Loss of weight. 3. Extreme weakness. 4. Diarrhoea.

History of present illness: One year ago he begun suffering with slight attack of pain in the stomach. More marked after a hearty meal. Some belching, and slight distress all the time. For the past six months distress in his stomach is constant, also a

dull, vague pain. Distress and pain increases with a hearty meal. Marked loss of appetite. Diarrhoea gradually increasing, and quite rapid loss in weight.

Personal medical history: Negative, except for occasional cold, and a short attack of la grippe.

Family medical history: Negative.

Physical examination: General appearance, patient is very much emaciated, and looks ill.

Chest, heart and lungs negative.

Abdomen, flat and flacid. Tender to pressure on



FIGURE 6. Case 3. Mr. H. July 24, 1917. Radiograms show filling defect of the greater curvature of the fundus of the stomach. Diagnosis: Carcinoma of the fundus of the stomach.



FIGURE 7. Case 3. April 4, 1918. Radiograms show filling defect of the fundus of the stomach much the same as of July 24, 1917.

left side below costal cartilage. Abdomen otherwise negative.

Gastric analysis, negative, except for achylia.

X-ray examination reveals marked filling defect of greater border of fundus of stomach, with emp-

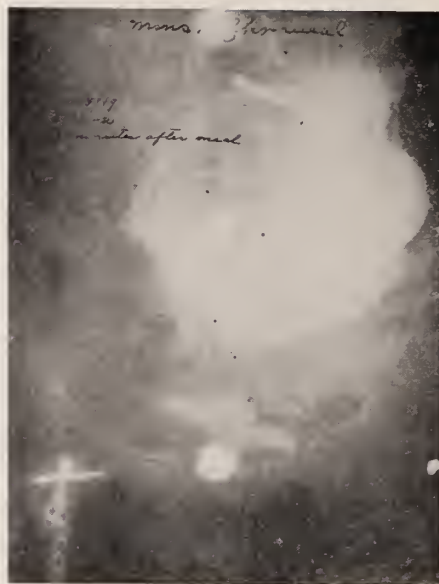


FIGURE 8. Case 3. Mr. H. Oct. 8, 1919. Radiograms show a less filling defect of the fundus of the stomach than of July, 1917.

tying time 1 hour and 35 minutes. This rapid emptying time with markedly diminished gastric secretion was the only apparent cause for his diarrhoea.

Diagnosis: Carcinoma of the greater curvature of the fundus of the stomach. This patient was given fractional x-ray dosage treatment, 9 inch back up, 4 milliamperes, filter 6 millimeters of aluminum and



FIGURE 9. Case 2. Mr. G. July 28, 1924. Radiograms show filling defect of the greater curvature of the antrum of the stomach much the same as of Oct. 22, 1923.

1½ inch felt, and an average of 9 minutes time. In all 1500 milliamperes minutes were given.

His condition gradually improved and on April 4, 1918, he returned for a check up on his condition. He had gained 37 pounds in weight, was

feeling quite strong, good appetite, and was begging for permission to do regular farm work.

X-ray films taken at that time revealed the filling defect of the stomach remaining about the same as on Oct. 29, 1917. And again he returned

same as of February 21, 1924. Mr. G. continues in good health.

Mr. H. also again returned July 22, 1924, for a check up on his condition. See figure 11, which radiogram shows filling defect of the greater cur-



FIGURE 10. Case 2. Mr. G. July 28, 1924. Radiograms taken with patient in prone position shows a 6 hours and 30 minutes residue of barium.

for a check up on his condition on Oct. 7, 1919, at which time the filling defect of his stomach was somewhat less than of Oct., 1917.

This patient was heard from on May 1, 1924, almost 7 years after his first examination. He has remained, and is now in quite good health, flesh and strength. Does not complain of any stomach trouble.

September, 1924. Since the foregoing was presented to the Nebraska State Radiological Society, Mr. G., case 2, again returned for a check up on his condition July 28, 1924. See figures 9 and 10, which show filling defect of his stomach about the



FIGURE 11. Case 3. Mr. H. July 22, 1924. Radiograms show a filling defect of the greater curvature of the stomach, but less than of July 24, 1917.

vature of the stomach much less than of July 24, 1917. Mr. H. at this time, 7 years after his first treatment, was in excellent health.

In the treatment of these cases no attempt was made to destroy the malignancy en masse. But I hoped to so disable the cancer cells that the cells would no longer grow. This I succeeded in doing to the extent that the patients were clinically cured. Time alone will tell whether the remaining scar-tissue will ever undergo malignant degeneration. In case three, a period of seven years has elapsed without clinical return of carcinoma.

THE INTERNIST AND THE LIFE INSURANCE EXAMINATION

Miles J. Breuer, M. A., M. D., F. A. C. P., Lincoln, Nebraska.

The average practicing physician does not take the life insurance examination very seriously. I have heard medical directors of insurance companies deplore the tendency to consider the examination a matter of filling out a printed blank as rapidly as possible, and to consider the fee as easy money.

The fact is, however, that the life-insurance examination is one of the most important tasks that a physician has to perform, either from the standpoint of his own indi-

vidual interests, or from that of his service to the public. Also, if done properly, it is one of the most difficult of his tasks.

The work of the medical profession is now entering on a transition stage. Its work in the past consisted in patching up illnesses into which the human race had stupidly blundered. Its work in the future is to consist in keeping up the standard of human health and efficiency; in caring for the human body as a skilled mechanic cares for a fine machine, keeping it in condition to run

smoothly, and constantly watching lest something go wrong. Eventually, it will be the physician's job to develop a race of bigger, cleaner, and happier human beings.

Things change rapidly nowadays. We are apt to find ourselves right in the midst of the new condition of affairs before we realize it. All about us there are signs arising of the increasing interest in health conservation. The man who trains himself for this work, is going to have the advantage under the new conditions. For it takes a different training and a different knowledge, and a vastly different personal attitude, to do this kind of work. The life-insurance examination, conscientiously carried out, provides an introduction to the training for this work, and assists materially in acquiring the necessary point of view. Under the old regime a man who was not complaining of something was not worthy of the physician's notice. Now, we are beginning to realize that he is the one most worthy of our notice.

Even the physician who is not interested in health conservation, but is satisfied with the old-fashioned attitude of affording relief to the sick, should be interested in doing as many life-insurance examinations as he can get, and doing them as carefully and thoroughly as possible.

In the first place, it provides him with an opportunity to examine a certain number of healthy, normal persons, and to establish in his mind, normal physical standards. How can he have any clear idea of physical findings in disease, unless he is familiar with physical findings in health and under normal conditions? This is especially important in physical examinations of the chest. It is absolutely impossible for a man to recognize disease conditions of the chest if he has never examined enough normal chests to know for certain what is normal and what is pathological; I am constantly seeing errors in diagnosis made for just this reason. However, the same thing applies to the abdomen; the man who is unfamiliar with the appearance of the normal abdomen will even fail to recognize the ptotic condition that is so common today. And, the same thing applies to throats, spines, backs, feet, reflexes—to everything that concerns the diagnostician.

The examination of a normal person

should be considered an opportunity to be eagerly grasped; and should be conducted as carefully and thoroughly as though the person were some rare specimen.

In fact, a normal person is indeed a rare specimen. Anyone who has examined any considerable number of presumably healthy persons, knows how few of them are really normal. The draft examinations, were a survey of the country's best at their prime of life; and yet only two-thirds of them were fit for service, which does not even mean they were normal, as the medical officers who dealt with them afterwards, well know.

Pathological findings in presumably healthy persons, or persons who have no complaint, fall into two classes. They consist either of minor matters, which do not seriously interfere with the person's activities, and never will, such as a nasopharyngeal catarrh, hernia, or flat foot; or of small beginnings of serious troubles, which have not yet begun to give symptoms, such as glycosuria, high blood pressure, or enlarged prostate. The great opportunity for progress in medicine that lies ahead of us, is the more accurate and extensive recognition of these small beginnings in their early stages, and the prevention of their serious consequences.

Therefore, the physician who is conscientiously interested in the examination of the apparently normal, serves his community doubly: he conserves to it the life, health, and labor of its valuable members; and he trains himself in a more accurate knowledge of physical findings, so that he is better able to cope with serious disease when he does find it.

The second reason why every physician should consider the life-insurance examination as an opportunity to be taken advantage of as thoroughly and carefully as possible, is that it is to his own economic interest to do so. It affords him the opportunity of making the acquaintance of a very desirable class of prospective patients. The people who take out life insurance are the kind the progressive physician wants for patients. The insurance examination provides him with the best opportunity in the world of showing them what he can do, and how carefully and thoroughly he works. Today, more than ever before, the layman

judges the doctor less by pretensions and mysticism, and more by the ability he displays and the care and thoroughness with which he works. Especially is the public being educated to the value of painstaking physical examinations.

I have heard physicians remark that life-insurance examination work was very desirable, because it was easy and carried no responsibility with it. That betrays a very superficial view of the subject. The life-insurance company sends you a man, and requests you to look him over, and asks: "How long will he live?" That does not look easy. It asks: "Can we safely put our money on him?" If you answer incorrectly, it holds you responsible. A life-insurance examination is one of the most responsible and difficult jobs there is.

A physician who has a difficult case in practice, insists on seeing it several times. He studies it, observes it, and thinks it over; and changes his opinion now and again. An applicant for life-insurance is seen once; and a decision must be made on the basis of that single examination. The examiner is compelled to state clearly, with yes or no, as to whether the heart, lungs, and other organs are in good condition. His work is checked over far more accurately than is any in private practice, and an error comes back to him more directly than it ever does in private practice. How can the conscientious man avoid making every stroke of the pen in his examination report with fear and trembling for the safety of his reputation as a diagnostician?

The examiner is employed by the insurance company, and paid his fee by it. His duty is primarily toward the company, from the point of view that the latter wishes to insure all the good risks it possibly can, and avoid insuring people on whom it will lose money. But that does not justify his working with a carelessly wide margin in the company's favor. He has a certain amount of moral duty toward the applicant. Unfavorable findings should not be put down on mere suspicion, "just to be on the safe side." If a person is once rejected for life-insurance, the stigma of it hangs over him for the rest of his life; and his chances of ever getting life-insurance again, are seriously impaired. Careful work and nice judgment are necessary to avoid working

him an injustice merely for the sake of being on the safe side as far as the company is concerned.

It is true that the medical director shares the responsibility, and exercises the final authority regarding the applicant's acceptance or rejection. But he is like a man working in the dark. He has never seen the applicant, and his work depends entirely upon what the examiner has recorded. This involves not only the question of the accuracy of the history and physical findings; it is idle to suppose that the insurance examination blank covers all of the elements entering into the applicant's probable length of life. There are many matters that cannot be concretely expressed in printed questions, and that the examiner must evaluate according to his experience and knowledge of human nature. Various habits in eating, in work and worry; and instinctive interest in one's own health or a constant careless disregard of it; recklessness in the presence of the possibility of infection or accident; cheerfulness and optimism and moderation; will power in the face of discouragement—all of these have quite as much to do with determining how long an individual is going to live, as have nephritis or syphilis. All of us know of individuals with a single remaining lung or severe Bright's disease, who have lived a longer and more useful life than many apparently healthy persons. By the same train of argument there must be individuals with the best of physical findings, whose days are nevertheless numbered because of unfavorable predisposing factors.

Most insurance examination blanks contain the request for the examiner's personal opinion as to the character of the risk. The reply to this is given more value in the case of some companies than in others. Medical directors of fraternal insurance companies probably work almost altogether by statistics, because they have no right to expect a very careful report for the fees they pay. The medical director who knows his examiner personally, and can depend on it that the latter studies his applicant's personality, is going to attach more value to the reply to this question. He will regard with much more care, the application with perfect history and physical findings, but with an unfavorable recommendation because of some defect in the personality; or

vice versa, the application with some handicap, but with a personality that can and will prolong life by proper care.

Today, many diagnoses are made by the internist far more on the basis of a careful and accurate history, than on material findings. History-taking has come to be a highly developed art, requiring much skill and experience to perform properly. The portion of an insurance examination that corresponds to the history, is fully as important as the physical examination.

In examining an applicant for life insurance, the "history" must be interpreted cautiously. It cannot be too strongly stated that the applicant's statements cannot always be depended upon literally. It is admissible that a deliberate attempt to deceive is rare and infrequent. I am positive that it exists with sufficient frequency to warrant considerable care. An occasion like the one in which I received a letter from a medical director requesting me to ascertain whether an applicant had an artificial leg, and in which I found the artificial leg to be a fact, even though the applicant had clearly replied in the negative to the question on "injuries, accidents, amputations, etc.," permits of no other interpretation; nor does the one in which I was approached by an individual with the request that I wash out his bladder and fill it with a fluid he carried in a bottle, and which was manifestly urine, probably from someone whom he had checked up on as being healthy. Every examiner is going to be fooled a few times in that way; but the better he is, the less times he will be taken in.

However, when we leave out of consideration all attempts at deliberate deception, we still find a large amount of untrustworthy history. Every internist, and every lawyer knows that people will tell many and curious untruths when there is absolutely no cause or reason for it, and when it would be far more to their interest to tell the truth. There seems to be a sort of perverse element in human nature that makes people exaggerate and mislead merely for the effect of it.

Furthermore, an applicant being examined for life-insurance is playing a game with the examiner. In some persons this sporting instinct is highly developed, and they think that they are quite justified in stretching a

little here and concealing a little there, just in order to be playing the game as hard as they can. Yet they would be highly horrified if the matter were to be held up to them in the light of dishonesty. All in all, the examiner must be constantly on the lookout against being misled, though he must be careful not to betray himself. Long experience will make him as clever as a customs-house officer in separating the false from the true; and no doubt there will always be some that will get past the best of them.

The writer is not connected with any life-insurance company, in any capacity save that of examiner; he is taking these remarks only from the standpoint and for the benefit of the internist or general practitioner who makes life-insurance examinations on the side. To sum up:

1. The life-insurance examination, instead of being an insignificant side-issue, is one of the most important things a physician has to do.

2. From a personal standpoint, it gives him an opportunity to form a normal standard of physical examinations, and to become acquainted with desirable prospective patients.

3. From a public standpoint it is an introduction to the technic of the examination of persons without complaints, which technic is going to be a very important part of the work of the future physician.

4. Life-insurance examinations involve a responsibility to the insurance company, to the examiner's reputation, and to the applicant.

5. These examinations are far from being easy; they require knowledge, skill, and training, and the work is full of pitfalls for the beginner and the unwary.

ETHYL CHLORIDE AND IODINE IN THE TREATMENT OF RINGWORM

The following treatment of ringworm has been suggested: Shave hair around each patch, wash the skin thoroughly with soap and water and finally with ether; paint the area with tincture of iodine; when dry spray with ethyl chloride. The active medicament is the small amount of ethyl iodide formed. This treatment is administered once a week and usually not more than a month is required to effect a cure.—Hughes in *Am. Druggist*.

VIVISECTION*

Michael G. Wohl, M. D., Omaha, Nebraska.

Permit me to express to you my appreciation for the privilege of addressing you this afternoon on a subject that is of vital interest to all of us—"vivisection."

The word is a misnomer as it does not in the majority of cases imply the actual dissection of animals, as the anti-vivisectionist would want us to believe; out in the majority of instances a simple hypodermic injection such as you all employ daily in your task of caring for the sick. During the year 1909 there were 73,000 experiments performed in England under the Act of Animal Protection and out of this number 96.5% were simple hypodermic inoculations that are of totally painless character; in the remaining number where operations were performed the animals were effectively anaesthetized.

On what grounds do the opponents of vivisection base their propaganda?

First they say: It is morally wrong to use animals for the investigation and cure of disease.

Secondly they claim that no advances in medicine were made through animal experimentation.

Third, they allege cruelty and heartlessness on the side of the experimenter—an appeal to human sentiment.

Let us briefly and impartially analyze those contentions.

From a moral point of view, if we invoke the scriptures we find ample references that: "Ye are of more value than many sparrows." The Old Testament sanctions the sacrifice of animals as a part of a religious form. Cardinal Daugherty expresses the view: "According to the laws of nature the lower species of creatures exist for the higher. The clod of earth supports the plant. The vegetable kingdom supplies the wants of the animal. The brute animals and all other inferior things are for the good of man, who was made directly for the glory of God. Man, then, may use all inferior things for his own benefit."

From a conventional point of view man does not question the use of lower animals

for his own purposes. Millions of bees, sheep, hogs, chickens, turkeys, etc., are being slaughtered yearly in the United States for food.

Custom has given man the right to interfere with animal life for his necessities and pleasures. He dehornes millions of cattle for his safety; he deprives the sheep of its wool that he may have clothes; he hunts and fishes for food or for sport; he harnesses animals that they may help him work and add to his welfare. No intelligent man will raise serious objections to this, yet when man uses animals to promote by far the most important factor of human welfare—good health—anti-vivisectionist protest is raised.

Nature is pitiless and cruel. Millions of human beings are sacrificed to her cruel experiments. It is only when man learns her intricacies and tames her that human suffering is relieved and diminished. It seems to me that the question before us is this: Would any of us weigh the life of a thousand guinea pigs against the life of one of our children? Can you compare the mental suffering caused by the loss of one that is dear to us with the discomfort that may arise from the loss of a cat, dog, or guinea pig?

To use Eliot's words: "Humanity which would prevent human suffering is a deeper and truer humanity than the humanity which would save pain or death to animals". Thus it is clear that as long as it is right for man to take animal life for food, clothes, etc., it is morally sound to take animal life in the interests of life and health of men, women and children.

What benefits have come to medicine through animal experimentation? We might safely say that all our recent advances in medicine, surgery and public health, are based upon animal experimentation, which is fundamentally essential for future progress. It is through animal experimentation that the science of Bacteriology was developed. It is by means of animal experimentation that the causes of infectious diseases were revealed and methods of prevention and cure discovered. Were it not for Pasteur and Lister, the world's greatest benefactors

*Read before the Nebraska State Nurses' Association, October 20, 1922. It is here published as suggestive source material some members of the profession might use in talks to semi-professional and lay organizations.

and vivisectors, if you will, modern surgery would never have reached the height it has attained today.

Dr. W. W. Keen of Philadelphia, one of the best known and best loved surgeons of the world, states that he cannot recall a single wound that was not infected during the Civil War. The mortality of wounds was fearful. Blood poisoning was common and its death rate was 97.4 per cent. Lock-jaw was often seen and its death toll was 89 per cent. Ordinary operations had a mortality of 15, 25 and 50 per cent. No wonder that surgery was resorted to as an extreme measure. Compare this situation with modern abdominal, head and thoracic surgery. The mortality is negligible; two or three die in every hundred and thousands are restored to health and joyful life, while in days before antiseptics two out of every three died. In the Munich General Hospital an epidemic of gangrene broke out at the time antiseptics was discovered, and 80 per cent of the wounds were infected. Since 1875, when antiseptics was adopted, no single case of gangrene occurred. These revolutionary changes in surgery were made possible through researches of Pasteur and Lister, who have demonstrated the presence of putrefactive micro-organisms in the air and in consequence the use of methods of antiseptic treatment of wounds were developed.

Friends, is it not startling that some of Lister's work with animals was done in France because of the annoyance caused him by the pernicious activities of English antivivisectionists who valued the lives of animals before those of human beings?

Lister's work on antiseptics has proven a boon to motherhood. Formerly one married woman in every eighteen died of childbed fever and during epidemics every fifth mother left her babe motherless. All sorts of mystic theories were advanced as to its causes, with no abatement in mortality. It remained for Oliver Wendel Holmes in 1843 and Semmelweis in 1861 to point out the cause as being carried by doctors and nurses in their carelessness and uncleanliness. It was, however, Pasteur, who in a humble fashion showed the medical world that the cause of childbed fever was a streptococcus. With the application of Lister's antiseptic precautions on the side of obstetrician and midwife, childbed fever is becoming a matter of the past.

Diphtheria has been for many years the bugbear of the family doctor. We owe to Klebs who first described the organism causing the disease in 1875, and Loeffler, who in 1884 isolated the bacillus in pure culture, the demonstration of the cause. Knowing the cause of the disease, Behring in Germany and Kitasato in Japan have worked on the cure of this disease. In 1890 the news came that at last they had cleared the way: "Our researches on diphtheria and tetanus led us to the question of immunity and the cure of these two diseases, and we have succeeded in curing infected animals and in immunizing healthy animals, so that they have become incapable of contracting diphtheria or tetanus." A ray of hope reached the rank and file of the profession, for diphtheria in the pre-antitoxin era, as the older men will tell you, has killed and strangled thousands of children, and the doctor stood helpless at the bedside, having done all he could in those days. Today when antitoxin is administered early in the disease, and that means an early diagnosis, the mortality from it is very small. It is to be remembered that the poison or the toxin of diphtheria enters the blood stream and attaches itself to the tissue elements and in this way produces irretrievable damage. In order for the antitoxin to be effective, it must be given as early as possible to neutralize the poison before it has combined with tissue elements. There is no time here to enter into an extensive statistical survey to prove the benefit of serum therapy in diphtheria. An adequate idea can be obtained by citing some of the tables given by Northrup in the American Edition of Nothnagel's Encyclopedia of Practical Medicine. These figures are taken from statistics of the New York Board of Health, which began the treatment of diphtheria with antitoxin in January, 1895:

Year	Without Antitoxin			Mortality per cent
	Cases Reported	Deaths		
1891	5,364	1,970		36.7
1892	5,184	2,106		40.0
1893	7,021	2,558		36.4
1894	9,641	2,870		29.7
Total	27,210	9,504		Avg. 34.9
With Antitoxin				
1895	10,353	1,976		19.0
1896	11,399	1,763		15.5

1897	10,896	1,590	14.5
1898	7,173	919	12.8
1899	8,240	1,085	13.1
1900	8,364	1,176	14.0

Total	56,425	8,509	Avg. 15.0
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From this there appears a reduction of 58 per cent in mortality. The mortality is still further reduced if we exclude from the above figures the cases that were too far gone before antitoxin was administered. The most striking confirmation of the value of antitoxin is seen in the fact that intubation and tracheotomy (emergency operations that were resorted to to prevent strangulation in the laryngeal type of diphtheria) have practically disappeared since the introduction of antitoxin. It is through animal experimentation that antitoxin was discovered and it is through the use of animals that an adequate supply for any community can be maintained.

The control and prevention of typhoid fever, cholera, small pox, dysentery, tetanus, hydrophobia, malaria, hookworm, yellow fever and many other diseases have been made possible through animal experimentation. And by the way, you all know the supreme sacrifice Dr. J. W. Lazear of Major Walter Reed's Commission paid in the study of Yellow Fever and banishing it from Havana. It took years of patient arduous labor of scientists in all parts of the world, work beset by difficulties and disappointment past telling, to give us means and methods of combating these diseases. The story of each scientific conquest is a chapter of heroism, self-sacrifice — "Man's Redemption of Man", if you please, in the science of medicine and surgery.

Tuberculosis, the Great White Plague, takes its toll from every walk and condition of life. In 1914 it destroyed about 144,000 lives in the United States. It was only at the end of the Civil War in 1865 that Villemin proved that tuberculosis is an infective disease, producing it in rabbits by inoculating them with tuberculous matter. The discovery of Villemin paved the way for Koch's epoch-making demonstration of the tubercle bacillus. The discovery and subsequent study of the germ has taught us that tuberculosis is not an inherited disease, and not always fatal; that it is communicable and, therefore, preventable and that in its earlier

stages it is curable. What a change this discovery wrought in people's minds! Instead of resignation and apathy it has given people a more hopeful outlook. A great anti-tuberculosis crusade spread all over the world — hospitals, sanatoria and dispensaries for the special care and treatment of tuberculosis have been established. Our errors were replaced by a rational scientific mode of treatment. It has taught people that sputa from tuberculous patients are the most common source of infection and the "Do Not Spit" sign is an outgrowth of it. It has also brought about the present rigorous control of milk and meat trades. Then the death rate began to fall. In Boston and New York City, for example, the death rate from tuberculosis since 1882 was reduced 40 and 55 per cent respectively. All we have learned within the past twenty years about tuberculosis we owe to animal experimentation.

The same story applies to another plague we had to combat, and that is syphilis. I shall not weary you with a narration of the steps that led up to the discovery of the causative organism, *spirochaeta pallida*, and of the diagnostic Wassermann test and the development of the curative drug. Let me remind you that the making of the Wassermann test and standardization of "606" requires the use of animals.

These rather briefly outlined facts give sufficient evidence as to the value of animal experimentation. The progress of medicine in the past, present and future depends upon vivisection.

The third point made in the antivivisection propaganda is that vivisection is needlessly cruel. This argument, like the former two, has no basis. I have in my hands a card of "Rules Regarding Animals" strictly followed in all laboratories in the United States, and you can readily see that all animals are anaesthetized before any operation is performed. The after care of the animal is painstaking. Usually the animals in the laboratories are taken care of better than at the time when they are picked up. It is necessary for the success of the experiment that the animals be treated with consideration, if for no other reason.

The laboratories throughout the country are open for inspection and any one desirous of witnessing what is going on in the place can gain admission. In spite of this we still

meet with opponents who by wilful misrepresentation picture the "horrors and tortures" imposed by the "human monsters" — the favorite phraseology of the anti-vivisectionist — men of the type of Pasteur, Koch, Gorgas, Keen, Flexner, etc., upon animals. It is unthinkable preposterous! Men to whom we intrust the health and life of our children, men who are kept in the highest esteem by their citizens, real benefactors of mankind, to be accused of "heartlessness" and be called "vile monsters!"

In conclusion let me quote to you from an editorial of the "Open Door", the national antivivisection and animal magazine. "It must be, of course, well-known to the operating fiends and to the newspapers which defend them that the so-called 'experiments' of the Abattoir (the Rockefeller Institute) are absolutely valueless as ministrants to surgical or medicinal science; that such is not their design, and that the sole purpose is to pander to the savage instincts of the malefactors who prey upon helpless and harmless animals that have been stolen from loving owners. They are ministering to their innate savagery and getting blood-money, money which their mediocrity and intellectual insignificance precludes them from earning in any legitimate pursuit, and which they properly regard as treasure trove".

Compare their statement with what Dr. Eliot, one of the foremost scholars and educators of the country, says about vivisection. This is in reply to an article written by Mr. Baynes, who was bitterly attacked by anti-vivisectionists:

"I admire your public spirit and courage in publishing in the 'Woman's Home Companion' Mr. Bayne's article entitled 'The Truth About Vivisection'. That article is accurate, truthful, and much needed; and it proceeds from a man who has abundantly demonstrated his love of animals, and his great services to the conservation and protection of many species of animals, both wild and domesticated. Your Journal is a first-rate place in which to defend animal experimentation, the process which lies at the foundation of all the progress that the medical science and art, including preventive medicine, has made during the past hundred years; for women are largely concerned in the attack on animal experimentation, but also are strongly interested, through their

love for their children, in the progress of both curative and preventive medicine.

"What animal experimentation has accomplished for the benefit of mankind may be inferred from the list of diseases which are no longer the destroyers and terrors that they were: Smallpox, cholera, typhoid fever, puerperal fever, yellow fever, cerebro-spinal meningitis, diphtheria, hookworm disease, and malaria. All these diseases would have remained the terrible scourges they used to be, were it not for animal experimentation and the progress in curative and preventive medicine which it has made possible".

This progress has been an immense benefaction to the whole human race.

Let us summarize what we have endeavored to show this afternoon:

1. As long as it is not considered wrong to use animals for food, clothing, etc., it is logically and morally sound to employ animals for the prevention and cure of disease.
2. The great achievements in medicine through which humanity has benefited have been made possible by animal experimentation. Without animal experimentation progress in medicine would come to a standstill.
3. Experiments on animals are today performed with as much care as any surgical operation in the best hospital—that is, with complete anaesthesia, aseptic technique, and the best after-care.

REFERENCES:

1. Experiments on Animals, by Stephen Paget, New York, 1900.
2. Arguments For and Against Experiments on Animals, by Richard Pierce, University of Penn., Lectures, 1915.
3. Medical Research and Human Welfare, W. W. Keen, Boston, 1917.
4. The Heart of the Antivivisectionist, C. S. Bluemel, Denver, 1922.
5. Whipple, American Journal of Public Health, 1921, p. 10.
6. Infection and Immunity, Zinsser. New York, 1914.
7. Ethics of Animal Experimentation, J. Dewey, New York, 1909.
8. Animal Experimentation in Infectious Diseases, S. Flexner, New York, 1908.
9. Animal Experimentation as Viewed by Laymen, Chas. Eliot, 1909, New York.
10. Lord Crommer's Defense of Animal Experimentation, New York, 1909.
11. Woman's Home Companion, Nov. 1921.
12. The Open Door, New York, June, 1915.
13. Animal Experimentation and Tuberculosis.

E. L. Trudeau, M. D. American Medical Assn., 1913.

14 The Role of Animal Experimentation in the Diagnosis of Disease. M. J. Rosenau, M. D. A. M. A., 1913.

15. Animal Experimentation: The Protection It Affords to Animals Themselves and Its Value to the Live-Stock Industry of the Country. Veranus A. Moore, M. D. A. M. A., 1909.

16. The History, Prevalence and Prevention of Rabies and Its Relation to Animal Experimentation. Langdon Frothingham, M. D. V. A. M. A., 1911.

17. The Importance of Animal Experimentation in the Development of Our Knowledge of Dysentery, Cholera and Typhoid Fever. Mark Wyman Richardson, M. D. A. M. A., 1911.

18. What Vivisection Has Done for Humanity. W. W. Keen, M. D. A. M. A., 1920.

19. The Value of Animal Experimentation as Illustrated by Recent Advances in the Study of Syphilis. John W. Churchman, M. D. A. M. A., 1911.

20. The Truth About Vivisection. Ernest Harold Baynes, Woman's Home Companion, July, 1921.

THE APPENDICO-BILIARY SYNDROME: GENERAL CONSIDERATION*

Max Emmert, M. D., F. A. C. S., Omaha, Nebraska.

The liver, being the largest of the digestive organs and receiving all the blood from the portal system, has under normal conditions a marked degree of resistance to infections and toxins and also considerable recuperative power after injury. It stands to reason, however, that, if it is subjected to a sudden overload or insult as in the case of an acute fulminating appendicitis, or to repeated low grade insults, as par example in chronic tonsillitis, its resistance will be lowered and the normal function thrown out of balance.

The work of Graham and Peterman proving experimentally and clinically the relationship between appendicitis, hepatitis and cholecystitis has changed our viewpoint of gallbladder disease so that we must consider it simply as a part of a syndrome and not as a distinct clinical entity. If this statement is accepted then the removal of the gallbladder alone will not in all cases cure the patient, because we have remaining the primary cause of the disease, which in my opinion is the appendix in approximately 75% of cases and abscessed teeth, tonsils and sinuses in the remaining 25%. Moreover, after the removal of the gallbladder there still remains the hepatitis which preceded the gallbladder infection and possibly a pancreatitis which may be associated in this syndrome. Therefore, the handling of these cases to successful ending necessitates a more comprehensive view of the pathology involved than has been given to it heretofore.

In 1901 Sudler clearly demonstrated and proved the direct anatomical relationship between the liver and gallbladder through the lymphatics, the main channels from the gall-

bladder running down along the cystic and common ducts, anastomosing with those from the pancreas and emptying into the mesenteric glands. This link of evidence completes the route by which infection reaches the gallbladder from the appendix, namely; from the appendix via the portal vein to the liver where a periportal hepatitis results, via the lymphatics from the liver to the gallbladder with a resultant cholecystitis and via the lymphatics along the ducts to the head of the pancreas with possibly a resultant cholangitis and pancreatitis.

The general circulation of the liver enters through the hepatic artery which in the liver tissue divides into the interlobular branches. These accompany the veins and supply the tissue and vessels between the lobules. Therefore, bacteria which enter the liver either by way of the portal or general circulation arrive ultimately in the periportal spaces and may set up a periportal hepatitis. Another anatomical fact of interest is that the veins from the gallbladder empty into the portal vein so that we have an anatomical basis for a vicious circle after the liver is infected.

Our problem now is to connect the above mentioned data with clinical experience in order to outline a proper treatment for these patients. There are two outstanding facts to be secured from the history of these patients: First—Food selection. Inquiry will elicit the information that the patient cannot digest with ease certain foods, especially those belonging to the fatty group. Some will handle meat if boiled or baked but cannot digest fried meats or fried foods of any kind.

Second—Indigestion (that vague symptom complex). This consists of a feeling of

*Read before the Audubon Co. Iowa Society, Oct. 22, 1924.

distress in the upper abdomen starting from one-half to one hour after meals. It is associated with a bloated feeling and often with eructation of gas. Also an indefinite pain or aching in the upper right abdomen about the liver region. This occasionally may develop into a definite cramp-like pain but more frequently is simply a sensation of discomfort. A low grade headache is frequently complained of and dizziness is a very common symptom both of which are undoubtedly of toxic origin. Constipation is common and frequently associated with light yellow stools.

The patient will frequently give a history of one or more attacks of so-called catarrhal jaundice, the cause of which is attributed to a catarrhal condition of the duodenum in the region of the ampulla of Vater in most text books. As far as I can learn there is no pathological evidence to prove the above mentioned explanation for the jaundice and I think that we will learn that most of these cases are due to a hepatitis.

There are two outstanding signs noted upon examination, namely: A distended stomach together with spasm and tenderness over the gallbladder. This tenderness may be slight or marked and often is not elicited until the patient is turned on the left side. At times the patient will complain of pain when lying on the left side and will volunteer the information that she always sleeps on her back or right side. Tenderness in the gallbladder region may extend along the liver margin which is frequently felt extending below the costal border. How frequently in the past we have interpreted these findings in appendix cases as being reflex symptoms and signs. In my opinion they indicate a low grade hepatitis and often clear up after the removal of the appendix.

Another fallacy to be corrected is the prevailing idea that gallbladder disease and especially gall stones are diseases of middle and old ages. I have had several cases of gallstones in their early twenties and literature occasionally reports them in their teens. The presence of gallstones must be considered as a late manifestation of gallbladder disease, hence if we allow our patients to reach the stone age we have been negligent in preventing unnecessary suffering on their part.

Early gallbladder disease cannot be diagnosed by palpation or inspection of the gall-

bladder. I have repeatedly removed gallbladders which in the gross were perfectly normal but under the microscope revealed the characteristic changes of chronic cholecystitis. Recently I removed such a gallbladder from a patient who had suffered from this syndrome for eighteen years and had been so diagnosed in one of our largest clinics.

The treatment of this syndrome is both medical and surgical. The first consideration being given to the primary causative factors, namely; the appendix, tonsils, teeth and sinuses. Often in those cases where biliary symptoms are of comparatively recent origin, a complete recovery will follow the removal or correction of these factors plus proper diet and medication directed to the liver. The length of time during which the biliary symptoms have existed has an important bearing upon the question as to whether or not surgery should extend to the gallbladder. I do not believe that all gallbladders should be removed because of the presence of biliary symptoms. When gallbladder surgery is indicated, in my opinion the removal of the gallbladder is the only logical operation because it is only by this method that we can break the path of infection from the liver to the gallbladder and pancreas. It also breaks that anatomical and possibly pathological vicious circle. The appendix, if present, should always be removed at the time of operation. I wish to mention only one point in surgical technique of cholecystectomy, namely, drainage. Wherever possible, which is in the majority of cases, the abdomen should be closed without drainage in order to avoid the mechanical interference with function and symptoms accompanying post operative adhesions.

After completion of the surgical treatment a great deal remains for the physician in aiding the correction of the hepatitis which still persists. It is needless to say that this requires proper diet and medication extending over a period of several months.

Gallbladder surgery in the past has not been accompanied by the most satisfactory results either to the patient or to the physician, but with a more comprehensive understanding of the subject I am convinced that in a great majority of cases we can definitely promise our patient a complete cure of their trouble.

SOME FALLACIES OF THE INTRAGLANDULAR INJECTION TREATMENT OF GOITER

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Some impetus has recently been given to the injection of phenol in dilute solution into the thyroid gland for the cure of adenomatous and exophthalmic goiter. Re-discovery of therapy of some, but usually of only slight value, occurs at intervals, and the treatment now discarded because its limited usefulness is well known may be heralded as a cure a generation hence. Thus the quinine treatment of pneumonia, regarded as almost a specific, has enjoyed a brief importance several times.

Crile⁽¹⁾ quotes Marine as stating that 239 drugs and other methods of treatment have had the cure of hyperthyroidism attributed to them.

The limited value of any form of intraglandular injection therapy is well known; to those whose experience in this field is large, denying the permanent value of such treatment would have the aspect of proving an axiom or needlessly wasting words. But as this procedure has lately been given some publicity here, with the inevitable result that patients throughout the state are having 5 per cent phenol injected into their thyroid glands, it is well to review the history of such therapy.

E. H. Ochsner⁽²⁾ attributes the first efforts of this sort to Moses Gunn. Haven⁽³⁾, in 1886 reported a series of 150-200 cases and stated that 20 to 30 mm. of a 5 per cent carbolic solution injected into the thyroid once or twice a week for 8 to 10 weeks resulted in a cure in almost every case. "Out of the 150-200 cases treated in this manner there were only two cases where any inflammation or feverish symptoms appeared and in these cases they only lasted a day or two." H. Schiemann⁽⁴⁾, used 5 per cent to 10 per cent aqueous solution of phenol with 5 per cent to 10 per cent glycerine, injecting 3 to 5 mm. in one place and using a total quantity of 15 to 16 mm. His praise of the treatment is not altogether unqualified. "If too much is injected gangrene occurs. (After injection) . . . the gland becomes swollen and sensitive, pain radiates to larynx, ears, throat and tongue; this lasts 6 to 12 hours."

Long before this was written other drugs

were injected into the gland, arsenic⁽⁵⁾, ergot⁽⁶⁾, iodine⁽⁷⁾, iodoform⁽⁸⁾, iodoform and ether⁽⁹⁾, bichloride or mercury⁽¹⁰⁾, potassium permanganate⁽¹¹⁾, ferric chloride⁽¹²⁾, quinine and urea hydrochloride⁽¹³⁾, to mention a few, and favorable results reported by their users. But these good results were not obtained by the profession generally and good effects were not sufficient apparently, to justify continued use, and the treatment was definitely abandoned. It was given up because the treatment was painful, abscesses were produced, necrosis of too much tissue sometimes occurred, or the results were too often temporary and because, at times, in spite of lessening the size of the gland the patient's condition grew worse.

The fallacies of the intraglandular injection treatment are: (1) It is not curative, (2) it is dangerous. No injection treatment of this kind can be considered a cure for exophthalmic goiter or hyperfunctioning adenoma (toxic adenoma). It is necessary to resect all but a twelfth to a sixth of the gland in a severe case of exophthalmic goiter to cure the patient, this amount of the gland cannot be safely destroyed by intraglandular injections. And in an exophthalmic goiter patient with marked hyperthyroidism any irritant injection may serve to further stimulate the gland to the production of more of its faulty secretion, thus further endangering the patient. Intraglandular injection will unquestionably benefit some cases, it is easily conceivable that the destruction of a small amount of gland substance might cure an early or very mild hyperthyroidism. And it is more certain that some cases of hyperthyroidism due to exophthalmic goiter will appear to be relieved, as they do with any kind of therapy, because the course of the disease is intermittent, progressing usually in exacerbations. Because of the natural tendency of the disease to lessen between crises, the patient's improvement is frequently attributed to whatever treatment is being given, this largely explains the 239 certain cures. The beneficial effects of the Porter⁽¹⁴⁾ boiling water injections in exophthalmic goiter are well known and the temp-

ary character of the improvement is equally well understood. Certainly some few patients are permanently benefited, just as some cases of exophthalmic goiter are cured without any treatment.

Intraglandular injections are not curative in hyperfunctioning adenomata because further toxic adenomata may remain. There is no absolute assurance even with direct inspection and feeling the sectional gland at the time of the operative removal of its major part, that all the toxic adenomatous tissue has been removed. As a matter of fact, the excision of a large portion of the gland does usually cure the hyperthyroidism in hyperfunctioning adenomata, but how much less chance there is with injections, where there is no control over the amount of tissue destroyed.

It is dangerous particularly for this reason. Disregarding the liability of the necrosis of too much tissue, abscess or other complication which may occur and which may result from merely technical errors, the gravest danger is that one or more adenomata in a gland having hyperfunctioning adenomata may be decreased in size, leaving others not so evident or not at all evident, which continue the patient's hyperthyroidism. While the gland may have been made to appear smaller, the myocardial, renal, hepatic and other visceral damage goes on unchecked. The false sense of security given to the physician by the decrease in size of the gland while the hyperthyroidism progresses is indeed dangerous.

A cystic adenoma or nontoxic adenoma large enough to require attention is more certainly, safely and expeditiously removed by the comparatively simple procedure of enucleating it.

We have quit the use of caustic pastes in the treatment of cancer, why hark back to the days of such therapy by using corrosive injections in goiters, which like caustic pastes may have an occasional cure attributed to them, but which are a decidedly irrational procedure. The intraglandular injection treatment of goiter, particularly the use of 5 per cent phenol, is almost as indefensible as the caustic paste therapy of cancer.

REFERENCES:

1. Crile, G. W., Surgery Versus Roetgen Ray in the Treatment of Hyperthyroidism, *J. A. M. A.*, Dec. 31, 1921, 1924.
2. Ochsner, E. H. A Non-operative Treatment of Goiter; *Nebr. State M. J.* 1924, ix, 245-252.
3. Haven, O. E., Goiter Treated by Carbolic Acid. *Week. Med. Rev.*, St. Louis, 1886, xiv, 288.
4. Schiemann, H., Carbolic Acid Injections in Piles and Goiter. *J. A. M. A.*, Dec. 10, 1910.
5. Dumont, F., Ueber die Wirken Parenchymatoser Arsenikinjectionen bei Kropfen, *Cor. Bl. f. Schweiz, Aerzte, Basil*, 1884, xiv, 201-208.
6. Palmer, C. N., Goiter Successfully Treated by Intraglandular Injections of Ergot. *Trans. Am. Med. Ass.*, Phila., 1878, xxix, 155-160.
7. Dymock, W., Cystic Bronchocele, Injection with Tincture of Iodine; *Cure. Ind. Med. Gaz.*, Calcutta, 1866, i, 363. Duguet, J. B., Goitres et Medication Iodee Interstitielles. *Paris*, 1886.
8. Von Mosteg-Moorhof, R., Die Behandlung des, weichen Kropfes mit parenchymatosen Injectionen Jodoform, *Wien. med. Presse*, 1890, xxxi, 1-6.
9. Marquet, P., Injections interstitielles d'ether iodoform dans le goitre. *Limousin med. Limoges*, 1894, xviii, 74.
- 10, 11, 12. O'Reilly, G. J. Treatment of Goiter by iodine, mercury and potash injections and radical cure by operation. *Lancet*, 1892, i, 741.
13. Watson, L. F. Injection of Quinine and Urea Hydrochloride in Hyperthyroidism, *J. A. M. A.* Jan. 10, 1914.
14. Porter, M. F. The Injection of Boiling Water in the Treatment of Hyperthyroidism, *J. A. M. A.*, July 12, 1913.

PAINFUL SACRALISATION OF THE LAST LUMBAR VERTEBRA

The sacralisation of the last lumbar vertebra consists in an abnormal development of this vertebra, which assume the appearance and the form of sacral vertebrae, forming a unit with the sacrum. This abnormality concerns most frequently the V., less often the IV. lumbar vertebra.

According to Sciaky, this abnormality is usually accompanied by a painful syndrome of an undefinable type. The pain is sometimes like that in sciatica or Pott's disease; sometimes it may simulate attacks of nephritic pain, ovarian or appendical pain. The patients tire easily, complain of pain in the loins when standing; in the horizontal position this pain may disappear. These phenomena are explained by pressure on the roots of the spinal nerves and irritation of these, as well as by the pressure of muscles and drugging of the ligaments, further by arthritic processes and synostoses forming between the apophysis and the adjacent bones. The pathogenesis is still unknown. The treatment, indicated here, is surgical, consisting in the systematic removal of the new-growths of bone and hyperplasias. (Il Policlino).

MEMBRANOUS ENTERITIS*

J. W. King, M. D., Hartington, Nebr.

One of the most common conditions that the physician is called upon to treat is an acute inflammatory process in the gastro-intestinal tract. These conditions have all been given names such as gastro-enteritis, entero-colitis, ileo-colitis, etc. Many of these cases are nothing more or less than an acute intestinal indigestion and when food is discontinued, the intestine cleaned out and the patient put at rest, they clear up themselves. There are a great many different forms of these conditions, generally classified in both nomenclature and pathology as to the different portion or portions of gut involved, and, of necessity, the pathology varies in each particular type. The kind that I wish to discuss at this time is that sort of intestinal inflammation occurring in children below the age of two years.

The most common form of intestinal disturbance, acute intestinal indigestion, has but little pathology and will be dismissed with no comment except to mention the fact that it does exist. In the majority of your cases of genuine intestinal inflammation, you have a swollen patchy looking mucous membrane in which there may or may not be ulcer formation. Your bacteriology will, of course, vary in each instance with the portion of gut involved and the origin of the infective process. You may, at times in the large intestine, have involvement of Peyer's patches as in typhoid fever but unless the case is extremely severe or is actually typhoid, these do not appear. The case which I wish to describe is a member of the membranous family of inflammatory processes taking place in the gastro-intestinal tract. In most of the present literature you do not find a membranous inflammation mentioned except in connection with the chronic types of the disease or in connection with mucous colitis. There are some mentioned that have been seen in connection with a diphtheria but the majority of those have been purely gastric, rather than gastro-intestinal. In an article in *American Medicine*, B. W. Knight discusses most of the types of intestinal inflammation in children but makes no note of a membranous form. The same is true of

Fellman in the *Wisconsin State Medical Journal* in his description of what he took to be an epidemic form of severe entero-colitis. P. F. Barbour, in the *Kentucky Medical Journal* mentions the membranous type in the series of cases reported by him, but does not go into detail as regards this particular form. In 1903 Holt reported eighty-two autopsies on children dying from some acute form of intestinal inflammation, more especially ileo-colitis, and found that out of the eighty-two cases death was caused in thirty-six by a follicular ulceration, in twenty-six by a catarrhal inflammation, in six by a catarrhal ulceration and in fourteen by a membranous inflammation. Wherever the disease is mentioned, however, the high mortality is always given so that the condition is generally regarded as having a high death rate.

In general, we may say that the membranous form of intestinal inflammation begins with about the same symptoms that usher in any other gastro-intestinal inflammation. The text books say that it generally occurs in summer, begins with vomiting and diarrhoea, high temperature, usually convulsions, considerable pain and bloody stools. The patient is terribly sick for anywhere from ten days on and if the case gets well at all, there is a long convalescence with more or less chronicity of the condition. Holt regards it as the most severe of any form of intestinal inflammation.

The case which I wish to describe at this time, violated about all the established rules in conditions of this kind so I will take it up in detail. This case occurred in winter and we will recite the following history because of the wide deviation from the usual run of these cases.

A female child, aged six months, bottle fed from birth and always unusually healthy. When first seen by me, she was in convulsions. Her mother stated that she had been well all winter and aside from a transitory constipation, she had been as well now as she ever had been. There had been no vomiting, no gastric symptoms of any kind, no temperature, so far as she was able to determine, and the convulsion came like a bolt from a clear sky. She had a small rapid pulse, temperature of one hundred and three-fifths, a distended abdomen which was slightly tympanitic. Tongue was clean and she carried no odor of acetone on the breath. She had no opisthotonos but was slightly cyanosed.

*Paper read before the Cedar-Dixon-Thurston-Wayne Counties Medical Society, July 10th, 1924, by Dr. John W. King of Hartington, Nebraska.

Believing that we were dealing with an ordinary case of intestinal indigestion, we put her into a hot pack until the convulsion ceased and then began giving high saline enemas and calomel every half hour. Our enemas brought but little fecal matter to which there was no particularly bad odor and no discoloration. The convulsions continued at hourly intervals, each one lasting approximately fifteen minutes. After the convulsions had continued for forty-eight hours, I thought that she had an opisthotonos but it might have been my imagination at that time, I was beginning to expect almost anything. This condition continued for seventy-two hours when the convulsions ceased entirely and the child became comfortable. At no time during this convulsive period did the temperature rise above 101 and it was below that point most of the time. About twelve hours after the cessation of the convulsions the child seemed to again become very sick, attempted to vomit, cried as though in pain but had no rise in temperature. Within a few minutes she had a bowel movement and seemed to improve immediately. Upon inspection of the diaper, we saw what a first looked like a quantity of mucous but upon closer examination found it to be membrane. We took it to the office and washed it and in conjunction with one of my colleagues we looked it over very carefully. We found that we had a membranous tube, thirteen inches in length that seemed to be a complete cast of the bowel. We tied one end and inserted a catheter into the other and tried to distend it with air. The first time we used too much force and it ruptured so we tied it below the point of rupture and distended it again, this time more gently. It then showed as a cast of the bowel, was extremely friable and had to be handled very gently to avoid breaking or tearing. Macroscopically it looked like a thin section of intestine with all the corrugations showing plainly. We stained a portion and through the microscope we found a collection of cells loosely held together with what we took to be organized fibrin. Upon staining for bacteria, we found a few bacilli but as we had rather bad luck with our bacteriology, we are unable to give you anything that might be of value. Following the passage of this membrane, the child began to improve and went on into an uninterrupted convalescence. For about a week her stools were occasionally flecked with blood but other than that she showed no symptoms whatsoever. We put her on a diet of modified milk for about two weeks, then on her regular feedings and she had no untoward symptoms of any kind.

Our treatment of this case had to be based on general principles rather than upon any exact or accurate diagnosis as the condition did not admit of ready and exact diagnosis. In our diagnostic problem, there were very few conditions that we might take into consideration as being the causative factor of the symptoms with which we were confronted. We were unable to find anything that might lead us to believe that the child was suffering from anything more than an ordinary case of intestinal indigestion and our temperature record really refuted that as it has been our experience that an intestinal indigestion always carries a high

temperature. The constant low temperature almost precluded any inflammatory condition, at least an acute one. The continued convulsions brought to mind, first, a spasmophilia and second a low grade infection of the cord. The spasmophilia should have cleared up in a much shorter time than was required for the convulsions to disappear and any cord involvement would have either become a great deal better or a great deal worse in the same length of time. Ileus was also thought of, especially intussusception, but we had no great amount of pain, no tenesmus and no bloody stools until after the passage of the membrane. Our treatment was all directed at the bowel and we gave our calomel and oil and high saline enemas, using hot mustard packs during the convulsive seizures. A success of our bacteriology might have gone a long way toward giving us a more accurate idea of the type of infection as well as to account for many of the symptoms we had to deal with. As the case now stands after having had time to reconstruct it and think it over, there are but two solutions that occur to us. First: That we had a great deal of exudate from a low grade inflammation and that it became organized and provided us with the membrane that was passed. Second: That we had a low grade infection of the bowel and that in some manner we had a break in the mucous membrane of the intestine that permitted our infective process to get under the membrane and that it, the membrane, was dissected off a great deal like an infection taking place between two layers of skin. In either event, we now believe that our convulsive seizures were due to the absorption of the toxins imprisoned beneath this membrane and that when the membrane was passed off it gave us the perfect intestinal drainage so necessary in the treatment of any form of intestinal inflammation. When the child became quiet after seventy-two hours of convulsive attacks, it marked the complete separation of the membrane and our convalescence was immediately established. This may be wrong but it seems to furnish the best explanation of the events that took place during the illness of the child. I will not try to add anything to the treatment of any of these conditions as they are all well established and are given in detail in any of our text books but we submit this as an unusual case and perhaps an explanation of the cause of continued convulsions in small children who are carrying a low temperature, no diarrhoea, no apparent cord involvement and nothing that would point to an extremely acute infection in the gastro-intestinal tract.

"Science has no nationality because knowledge is the patrimony of humanity, the torch which gives light to the world. Science should be the highest personification of nationality because, of all the nations, that one will always be foremost which shall be first to progress by the labors of thought and of intelligence. Let us, therefore, strive in the pacific field of Science for the pre-eminence of our several countries."—Pasteur.

SYPHILIS OF THE LUNG*

Report of Case.

Manuel Grodinsky, M. D., Omaha.

Patient A. K.—Male—age 38. Single. Colored.

History: I first saw the patient in August 1923 with the following chief complaints: 1. Dyspnea, accompanied by a sense of fullness in the chest. 2. Cough. 3. Pains in muscles, joints and chest.

All of the above symptoms were of about one month's duration according to the patient.

Past History: Chancre in December 1922. Had local treatment only at that time. Generalized skin eruption about six weeks later. The rest of the history was negative or unimportant.

Physical Examination: Showed a well nourished colored man with marked dyspnea and a cough productive of a moderate amount of muco-purulent sputum. The scars of a skin rash were present over the back and chest. There was a general adenopathy including the posterior auriculars and epitrochlears.

Eyes: Pupils react to light and accommodation.

Ears and nose: Negative.

Throat: Chronically congested.

Chest: Heart, apex in 5th interspace in anterior axillary line, first sound left booming in character. Slight systolic murmur over apex.

Lungs—Inspection: Diminished excursion on right, right.

Palpation: Tactile vocal fremitus diminished but present over lower half of right lung.

Percussion: Dullness over middle and lower right lobes. Perhaps flatness in extreme lower part.

Auscultation: Numerous moist crepitant and sub-

over this area. No bronchial breathing except in small area posteriorly.

The pulse on first examination was 120, temperature 99°F. The urine was negative. Blood Wassermann test, 4 plus. The sputum was repeatedly negative for Tb. The temperature after the first examination was always normal. X-ray showed a consolidation of the middle and lower right lobes. According to Dr. Ballard there was no x-ray evidence of Tb, and probably no fluid in the pleural cavity.

Treatment: The patient was first given neo-arsphenamine intravenously. He responded almost immediately to treatment and was greatly improved after the first few injections. After the second injection, a needle was inserted into the pleural sac and about 10 cc. of straw colored fluid obtained, the smears of which were negative to Tb. No animal inoculations were made. No further aspirations were done. The course of neo was followed by a course of mercury and then by potassium iodide internally. The neo was then repeated, etc. Altogether up to April 1, 1924, the patient received 12 injections of neo and 30 injections of mercury, either in the form of the salicylate or mercurousal.

Results: At that time, (April 1924), the blood Wassermann test was negative. His chief symptoms of dyspnea, cough and pain in the muscles and joints were all gone. Upon physical examination, the percussion note and breath sounds were normal on both sides and the rales had all disappeared. X-ray



crepitant rales over middle and lower right lobes. Breath sounds diminished in intensity but present

showed the right lung clear except for a few adhesions to the diaphragm. The patient then disappeared for a few months and I recently learned

*Read before the staff of the Wise Memorial Hospital, Sept. 8, 1924.

that he was killed in an accident about one month ago.

Incidence of Pulmonary Syphilis: The incidence of lung syphilis is very difficult to arrive at. In the first place most figures are based upon autopsy reports in which the diagnosis is proven by microscopic section; but there is no doubt that a far greater number of cases are cured of their luetic pulmonary lesions before death from other causes—the nature of the pulmonary lesions either being diagnosed clinically or the lesions cleared up by treatment for other coincident syphilitic lesions which were recognized.

Osler reports 20 cases of pulmonary syphilis in 2800 autopsies; 8 of the 20 were congenital, 11 were definite gummata and only 3 were diagnosed clinically. At the Massachusetts General Hospital, there was one case of pulmonary syphilis in 5,000 autopsies. Howard in January 1924, estimated the total number of cases reported in the medical literature of the world as 200, with an incidence of .05% in his own clinic.

On the other hand some of the cases reported as lung syphilis are probably based on insufficient proof and are really tuberculous cases, in which they have failed to find the bacilli, or cases of fungi infections such as blastomycosis or actinomycosis. There is also no doubt but that mixed infections also exist. Watkins claims that 22% of 948 patients with advanced Tb. showed x-ray evidence of pulmonary syphilis, while Hollander and Narr state that 10.3% of 830 patients undoubtedly had both pulmonary Tb. and lues. Other men report

from 3 to 6% of Tb. patients with coexisting luetic lesions in the lungs.

Diagnosis: Most authorities consider the diagnosis of pulmonary syphilis to be one of exclusion. In general, a patient with physical signs out of proportion to the symptoms and with a unilateral lesion confined to the hilus or base should suggest lung syphilis. Repeated sputa negative to Tb., to a positive luetic history, positive Wassermann test and the presence of other luetic lesions point further in that direction. The x-ray is confirmatory in locating the lesions more definitely and in excluding apical Tb. However, the final clinical proof is the therapeutic test. The majority of these patients will clear up or be greatly benefited by anti-luetic treatment.

Complications. The most common complication is pleurisy. Almost all have some pain in the chest due to dry pleurisy and, although not the rule, pleurisy with effusion also occurs; 4 out of 35 cases looked up by Egdahl had pleurisy with effusion.

BIBLIOGRAPHY.

- Howard—Am. Jr. of Syphilis. Jan. 1924, 8:1-33.
 Egdahl—III. Med Jr. 43:50-54 Jan. 1923.
 Gilman—Wisc. Med. Jr. 21:459-64 March 1923.
 Hawes—Boston Med. & Surg. Jr. 190-92-95 Jan. 17, 1924.
 Weber—British Med. Jr. 1:1049-1050 June 1923.
 Ashland—Jr. A. M. 9. 81:1150 Sept. 24, 1923.
 Watkins—Am. Jr. Roentgenology.
 H. Wessler & L. Jaches—Clinical Roentgenology of Diseases of the Chest.

NEPHROSTOMY AND DRAINAGE OF PERINEPHRITIC ABSCESS UNDER PARAVERTEBRAL ANAESTHESIA

Chas. F. Heider, M. D., Sutherland, Nebr.

Mr. F. C., age 62, farmer, came under my care complaining of marked weakness, occasional chills, followed with temperature and pain of dull aching character in right loin.

On inquiring into his history, it was found that outset began a week previous, with marked rigor followed with fever. Cough had bothered him some. He had been up and down at times until he became so weak that he was permanently confined. He stated that years previous he had been afflicted with kidney stone.

Physical examination showed a man very much prostrated and weak. Pulse and temperature and respiration on admission to hospital were 100½-80-20. He had an odor about him associated with lung abscess or an odor of sepsis. However, examination of lungs revealed only a few crepitant rales in left base. Some tenderness was found in loin over left kidney. White blood count 20,000, 90% Polys, 10% Monos. Urine negative for albumin and sugar, but pus cells were exceedingly plentiful. It was decided that further study would be necessary.

In the meantime systemic treatment was instituted. On the second day in the hospital a chill took place lasting for one-half hour, followed by profuse perspiration, pulse going up to 106 and temperature to 102. A noticeable fact about the

temperature was that except following chills, it was subnormal, being as low as 96 in the morning. This was taken as evidence of metabolism at low ebb. Constipation was the rule. Pain and tenderness in left loin became more intense, and more localized, radiating into left iliac region. The usual problem of whether the pathology was below or above the diaphragm, or both, was to be settled; i. e. a differential between such conditions as lung abscess, encapsulated empyema above, and pyonephrosis and perinephritic abscess below the diaphragm. Radiograms of the chest proved to be negative, while that of the left kidney region showed a group of renal calculi, six in number, ranging from size of a pea to a small marble.

After weighing the evidence, a diagnosis of pyonephrosis—perforating the kidney and forming a perinephritic abscess, was made, with renal calculi of long standing. Operation was decided upon, mainly with the idea of drainage of the abscess, as condition of the patient would not warrant any extensive surgical procedure. Local anaesthesia was decided as choice of anaesthetic. Morphine sulphate gr. ¼ and scopolamine hydro-bromide ("Roche") gr. 1-200, were given one hour before time of operation. Another 1-200 grain of scopolamine was given half an hour before operation. As result of scopo-

lamine, the patient was in state of semi-narcosis when placed upon table. The 8th, 9th, 10th, 11th and 12th dorsal, and 1st, 2nd lumbar spinal nerves were blocked by paravertebral method, with 1% novocain with 15 gtts. adrenalin chloride to the ounce—about 80 c. c. were used in all. (The success of local anaesthesia in this region lies in proper technique of infiltration, being sure to get the sympathetic rami bathed with novocain. This properly carried out will render the kidney completely insensitive and no further anaesthesia will be necessary.)

Waiting about ten minutes for anaesthesia to take place, an exploratory needle was inserted into perinephritic space, and a thick yellowish green pus was drawn into syringe. This confirmed the diagnosis. The regular transverse kidney incision was made, and tissues divided down to fatty capsule. When this was opened, pus welled into the incision, approximately a quart being removed with suction apparatus. After digital exploration, it was found that the cortex of the kidney was necrotic, and had ruptured, allowing a finger to be put directly into pelvis of the kidney. The six calculi were easily removed, and drainage tubes inserted directly into pelvis of kidney. Wound was then closed with silk-worm suture.

After about two hours, the patient had recovered from the effects of scopolamine, and asked why we were delaying the operation, having remembered nothing of the operation. He made an uneventful recovery, and was seen one month later. To my surprise the wound was about closed, and no urinary fistula resulted.

My reasons for presenting the above case report are:

(1). To emphasize the point that the practitioner must study his cases as well as the man who limits his practice. He may have to rely upon his clinical sense more in the absence of the more modern instruments of diagnosis.

(2). To endorse the practical use and value of local anaesthesia in general practice, especially when preceded by scopolamine. I am convinced that such a valuable drug does away with most of the "vocal" anaesthesia in regional work when carried to the point of semi-narcosis.

GRANULAR DEGENERATION OF CYTOPLASM OF HEPATIC CELLS.

A Case Report.

Earle E. Boyd, M. D. Central City, Nebr.

I report the following case as unique, at least, and as of interest to the profession.

Vernon F., American aged 9 years, was first seen on Sept. 20, 1924, and died Sept. 24, 1924.

The writer called to his assistance Drs. Fouts, Hutchinson and Martin.

The following conditions were found:

Patient had had tonsillitis about two weeks before, as reported by mother, and about a year prior

had had infantile paralysis from which he had never fully recovered having limited motion in his legs.

Physical findings were as follows: Lungs normal, heart very weak, pulse thready, temperature sub-normal, abdomen tympanitic and dull on precussion to the width of three fingers below the costal margin on both sides. Urine, three samples showed urates and phosphates in large quantities; one sample showed a trace of albumen. Blood hemoglobin 50%; whites normal, reds badly disintegrated. Bowels moving freely, no soreness over abdomen, no pain. Patient vomited a large amount of undigested food and was very anaemic.

A post-mortem was done and all organs except liver were found to be normal.

The liver extended three fingers' width below costal margin and was uniformly smooth, of a dark red color and bled freely when cut. Samples were sent Dr. M. G. Wohl and his report follows:

"Omaha, Nebr., Oct. 10, 1924. The examination of the tissue from your little patient aged 9, showed a granular degeneration of cytoplasm of the hepatic cells. There is an occasional area of round-cell infiltration in the neighborhood of the small hepatic vessels. Conclusion:—The condition is what is designated as a cloudy swelling of the liver and is usually secondary to some infectious or chemical toxins.

Please write me a few clinical notes of the case. Thank you I remain.

Fraternally yours,

M. G. Wohl."

To this I replied as above and asked where I could secure literature on this trouble; to which Dr. Wohl replied that he knew of no literature on this subject and suggested I report it to the journals.

A SIMPLE REMEDY FOR SENILE PRURITUS

The troublesome itching to which many persons advanced in years are subject is almost invariably relieved by rubbing the skin over the pruriginous areas with a soft brush for from twenty to twenty-five minutes two or three times daily. After a few days, a single application of the brush before going to bed suffice to avert its recurrence. The brushing removes much epithelial debris, the presence of which is the cause of itching; but it is important to avoid the use of a hard brush, which is apt to intensify the cutaneous irritation. It is well to swab the surface, after brushing, with pure spirit of cologne water, allowing to dry by evaporation, and when this application is not well borne, to use hydrous wool fat or petrolatum. The treatment, of course, is not as radical as the application of Roentgen rays, but it appears to provide the means for mitigating and controlling an otherwise intractable condition.—Dr. Francis Veress.

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THE END OF VOLUME IX

The December number completes Volume IX of the Nebraska State Medical Journal. Those who have watched the Journal from infancy through early childhood must be impressed with the thought that it is approaching adolescence a pretty rugged youngster. The earlier volumes each contained 360 reading pages. The first year of the present editor's incumbency (1921) this was increased to 400 pages. The present volume contains 500 pages of reading matter. This is believed to be a normal, healthy growth, co-equal with the growth of modern medicine in the state.

MAKING DOCTORS AT THE UNIVERSITY COLLEGE OF MEDICINE

The need for expansion at the Nebraska University College of Medicine has been forced upon those in authority by the increasing number of persons applying for admission. There are about 360 students this year in the four grades which crowds the facilities to the utmost. About 400 applications for admission to the freshmen class were filed this fall.

In accepting students Nebraskans are given preference. The reputed standing of the college of medicine may be judged by the fact that the pre-medical college work of the present student body, mostly Nebraskans, was obtained at over forty different colleges.

The University regents are about to pre-

sent a ten-year building program to the legislature asking for a small levy for each year for needed buildings for the University, part of which shall be for the college of medicine.

MEDICAL PROBLEMS IN NEBRASKA: ANSWERS TO QUESTIONNAIRE

The questionnaire sent to the 1200 members of the Nebraska State Medical association, November 1st, brought answers from 400 members, up to the time of going to press, November 25th.

As the questionnaire was sent out with an addressed and stamped return envelope and an urgent request for prompt reply, it may be assumed that the responses received represent the percentage of members interested in the medical problems of the profession in Nebraska today.

A tabulation of the answers in an abridged form is herewith given to show the trend of the sentiment of those answering. Space forbids classifying and publishing every answer under its own heading. Only the principal ones are here tabulated.

It is evident from a study of the answers that some of the questions were misunderstood and that some answers are from a different angle than some others. Possibly the questions were not as specific as they should have been.

A. What should be the attitude of the medical profession toward the various cults treating the sick?

Answers.

Ignore—216.

Equalize fundamental science requirements—65.

Investigate cults—12.

Compel compliance with law—11.

Educate laity in elements of medicine—30.

Open antagonism—29.

Tolerance—37.

Doubtful answer—22.

No answer—10.

2. Should the Nebraska State Medical association engage in propaganda for the purpose of educating the public?

Answers.

Yes—267.

No—89.

2a. If so what method should be employed?

Answers.

Newspapers, welfare organizations, picture shows, radio, lectures, etc.—219.

Hygeia—11.

Through our publicity committee—6.

Full-time secretary—3.

Better service—6.

2b. How best finance such a program?

Answers.

Assess members—161.

- By state tax—7.
No opinion—11.
3. What suggestions have you to improve educational methods that may better prepare students for the practice of medicine?
- Answers.
Better course in daily practice—87.
Apprenticeship with physician or surgeon—23.
Longer internship—14.
Cut surgical clinics one-half; put student in contact with disease—4.
Selection of students—9.
Bachelor's degree—23.
Less pre-medical work—14.
Course in the economics of medicine—40.
More therapeutics—12.
Present methods satisfactory—36.
Scattered answers—22.
No answer—127.
4. What is your opinion of group practice?
- Answers.
Vicious—65.
Theoretically ideal—76.
- 4a. Is group practice practical?
- Answers.
Yes—148.
Yes, in large cities—45.
Alright in small towns—4.
No—70.
- 4b. Does group practice serve the best interests of the public?
- Answers.
Yes—118.
Yes, in large centers of population—29.
Yes, but expensive—4.
No—72.
Smacks of commercialism—49.
No opinion—43.
5. What relation should the consultant bear to the general practitioner?
- Answers.
Ethical councilor, advisor, helper, co-worker—175.
Should endeavor not to belittle attending physician—12.
Should not steal patient—14.
- 5a. What do you think of consultation behind closed doors?
- Answers.
Favor private consultation—111.
Depends on patient and people—39.
Private consultation; then open discussion—8.
Favor open consultation—178.
No opinion—16.
6. Do you favor some method of division of fees between the general practitioner and the consultant?
- Answers.
Yes—139.
Yes, in the open—48.
No—203.
Let attending physician make adequate charge for his service—30.
Consultation fees generally too high—(many—not counted).
No opinion—5.
7. Are hospitals in rural districts proving a success?

Answers.

Yes—212.

No—54.

7a. What may be done to improve their efficiency?

Answers.

Endowments, church state or county support—33.

Better equipment—12.

State supervision—4.

More P. G. work for those in charge—11.

Good organization, team work, unselfish service—27.

Standardize—17.

No reply—94.

7b. Are such institutions justified in advertising in ways that are not regarded as ethical when practiced by individuals?

Answers.

Yes—63.

No—174.

No opinion expressed—96.

8. What means would you suggest for cutting down the doctor's overhead expense?

Answers.

Cut office assistance—5.

Office at home—8.

Do more work yourself—10.

Care in buying equipment—41.

County society or group purchasing—18.

Careful business management—46.

Use "Fords"—14.

Group offices and reception room—51.

The personal equation—40.

Better business training—36.

Raise fees—6.

Can't be done—10.

Personal economy—18.

County society collection system—12.

No suggestions—125.

9. Should there be a separate degree and license for the practice of specialties?

Answers.

Yes—154.

No—206.

No answer—34.

10. Do you believe in twelve hour duty for special nurses?

Answers.

No—117.

Should vary with cases—29.

Yes—191.

10a. What do you think of three years training for nurses?

Answers.

All right—180.

Too long—128.

Should have one year for practical nurses—6.

No opinion—48.

11. How may our medical meetings be improved in attendance and usefulness to the profession?

Answers.

More dry clinics—37.

More practical papers—101.

Feature discussions, round table, etc.—17.

Import talent—26

Less politics—16.

- More individual personal interest—27.
- More social features—8.
- More papers by general practitioner—14.
- Joint meetings of county societies—5.
- More meetings in smaller cities—3.
- Fewer meetings—4.
- By sectional meetings—2.
- Cut out the old ring—4.
- No opinion—62.
- Meetings satisfactory—14.

11a. Should we have meetings for the lay public in connection with our society meetings?

Answers.

- Yes—141.
- No—127.

12. What suggestions have you to improve the welfare of our state association?

Answers.

- Less politics—37.
- Get into state politics—3.
- More social features—2.
- Make all participate, use alphabetical list—5.
- More practical work—96.
- Meet out in state—6.
- Closer affiliation—62.
- Executive secretary—3.
- Association doing very well—22.
- Continued effort—6.
- No suggestion—204.

13. What should be the attitude of the hospitals toward the members of the medical profession?

Answers.

Willingness to cooperate and aid ethical doctors—140.

Standardization of doctors—10.

Do not know—4.

13a. Do you favor the open hospital with equal privileges to all?

Answers.

- Yes—148.
- No—38.

13b. Should ward beds be reserved for members of the staff?

Answers.

- Yes—60.
- No—129.

13c. Why have a medical staff in a private hospital?

Answers.

- No reason why—89.
- Necessary to efficiency—90.
- No opinion—69.

THE NINETEEN-TWENTY-FOUR CLINICAL CONGRESS

The annual meeting of the American College of Surgeons this year was held at New York City and Brooklyn, October 20-24, inclusive. The enormous clinical advantages of these two great cities makes possible a wonderful demonstration of surgical material for this great Clinical Congress. As the chairman of one of the reception committee said, "These twin cities are so very large and the material so scattered that it really makes

entertainment difficult and at times embarrassing".

There were distinguished guests from England, Scotland, France, Italy, Switzerland, Australia, New Zealand, and other places. These men appeared upon the program with scientific papers and as formal discussionists. Perhaps the most outstanding subject of their presentations was that of surgery of the sympathetic nervous system. Royle and Hunter of Sydney, Australia presented the results of their original and recent experimentations of sympathectomy on animals. Also the results and present recommendations of lumbar sympathectomy for spastic paralysis and paraplegia. This same general subject appeared at different times on the program, when they and Adson, Kanavel and others of U. S. A. presented experimental and operative results by means of very extensive moving picture demonstrations. Their results warrant the use of the operation in spastic paraplegia and perhaps certain circulatory diseases as Raynaud's disease, but it is not recommended for indiscriminate use in various cases of infantile paralysis, Parkinson's disease, etc.

Robertson of New Zealand presented the subject of septicemia and advised intravenous injection of antiseptics. Each discussionist presented his favorite with about equal evidence that it was of decided value.

Ulcer of the stomach and duodenum came in again for its hour on the scientific program. The "Ayes" and "Noes" were about usually divided concerning posterior gastroenterostomy. Some of the foreign surgeons were recommending extensive excision in gastric ulcers, leaving large portions of the antrum closed off from the stomach and still emptying into the duodenum, with the cardiac portion anastomosed with the duodenum or jejunum.

The other outstanding feature of the Hospital Program was the importance of correct staff conferences. The professional activities in the wards, operating rooms, laboratories, and record keepings form the basis for the conferences. Record examining committees select cases to be presented. These usually represent outstanding case features such as lead to death, prolonged convalescence, house complications, and unusual results. A model staff meeting was presented by the Brooklyn Hospital Staff and it was most interesting.

There were special morning and afternoon

scientific programs for the Eye, Ear, Nose, and Throat men. They also had special clinics.

By way of summary, one may say after attending this and most of the other meetings since the College was organized, that real progress can be noted. Aside from the general stimulus and instruction that always goes with a scientific and general program of this character, the American College of Surgeons is accomplishing other worthwhile work. Without doubt, they have done much to improve hospitals. Year after year they have extended this work to reach more and smaller hospitals. Last year all hospitals of thirty-five or more beds were visited. Assistance and advice by students of hospital problems, such as the College has, can only do good, if met by a spirit of co-operation from the hospital. Standardization may advance too rapidly or go too far, as recent critics have sometimes told us, but retreat is always possible. For those hospitals operated for gain at the expense of the patient's good, an additional difficulty is presented by the College supervisory work.

The Nebraska candidates admitted to Fellowships were C. F. Andrews, Lincoln; Dr. L. E. Moon, Omaha and Dr. A. A. Smith, Hastings.

—J. S. Welsh.

THE CENTRAL STATES PEDIATRIC SOCIETY ROCHESTER-MINNEAPOLIS, OCT. 30-31

The Central States Pediatric Society has grown to be the largest Pediatric organization in the United States. The American Pediatric Society is a very exclusive organization, its membership being limited to one hundred members, and the requirements are such that practically only professors of medical schools are available candidates. The Central States society is open to any physician of good reputation doing exclusive pediatrics within the territory covered.

The meetings have been noted for the wealth of clinical cases presented, and the 1924 meeting has not shown any inferiority in this direction. Over two hundred pediatricians were in attendance throughout the meeting. Twenty-nine clinical cases and papers were presented the first day at Rochester. Brevity of presentation has characterized the programs of this association. The average allotted time being ten minutes. Very rare and unusual cases also characterized the program. Removal of a rectal polyp proved to be a meningocele, having resulted

in a meningitis and death; congenital absence of the lung with a pneumo-thorax; thrush involving the entire body surface and persisting for two and one-half years. Dr. Helmholtz of Rochester on "Therapy in Pyelitis", continues the use of urotro in combined with ammonium chloride and insists that two quarts of water be taken daily by the patient.

Dr. Peterman presented perhaps the best paper of the Rochester session in the title, the "Ketogenic diet in the Treatment of Epilepsy". The patient is put on a starvation diet of three to five oranges daily with water freely for one week, until an acidosis develops, shown by acetone and diacetic acid in the urine, then the patient is continued on a low carbohydrate and protein diet, with a high fat intake to make up the necessary calories to maintain basal metabolism plus some for exercise. In no cases where a state of acidosis was maintained was there any petit or grand mal attacks.

Plummer said that exophthalmic goiter was uncommon in children, out of 5,000 cases only 30 were under 15 years, and only 8 under 10 years. Iodine positively cures hyperthyroidism.

Dr. W. J. Mayo, spoke on splenectomy in childhood, and as usual endeared himself in the hearts of his hearers. He has the faculty of giving you big things in simple language. His is a master mind and one cannot help but immediately associate this world's greatest clinic with him. While it is a financial success, it is also a success in every other way. This clinic gives to the medical world many of the newest methods of treatment in both medicine and surgery.

Dr. Charles Mayo spoke at the evening banquet, and one hardly likes to consider him a lesser light, and but few do. He just made a talk, not a prepared speech. He spoke of big men in the east who speak decidedly on certain subjects, for example, he said certain men say decidedly that cancer is not a germ disease, such a condition would be against pathological law. Such a condition of mind is closed against certain lines of research and Dr. Charles complimented the men of the middle west as having open minds for new thought or new things. He said that every tenth woman and every twelfth man died of cancer. He spoke of chemistry, saying there were 92 elements in the entire world, and that the body was made up of 14 of these elements. He spoke of iodine as one that was needed in very small amounts. He

touched on the recent work of Australian surgeons along the line of paralysis, especially spastic paralysis, cut the sympathetic nerve fibers and you have the spasticity gone; muscle training is then resorted to and the return to normal function seems possible. He carried this on into the treatment of pylorospasm, and Hirschsprung's disease.

Dr. Rosenow spoke on poliomyelitis, and demonstrated a very simple agglutination test, made from swabbing the naso-pharynx of suspected cases.

After a full day we journeyed on to Minneapolis to listen to the presentation of forty-one clinical cases and papers in a similar fashion, but not quite so well timed as at Rochester, where system dominates everything.

Dr. E. J. Huenekens gave a report on fifty cases in a pre-school clinic, with special reference to habit formation. This is a new field and is along the line of discipline, a thing sadly neglected in most of our homes today. Unanimous applause greeted the speaker when physical punishment was suggested as a necessary resort in some cases.

Intracranial hemorrhage was a topic given considerable place on the program. Beautiful postmortem specimens were shown, many of these hemorrhages are due to tears of the tentorium. Any cases of convulsions, soon after birth, are suggestive of intracranial hemorrhage; twitchings may mean a cerebral edema. Many of these cases are helped by lumbar puncture, done repeatedly until the spinal fluid is clear.

—W. O. Colburn.

INTER-STATE POST GRADUATE ASSEMBLY OF AMERICA

The last five days of October witnessed one of the largest and most enthusiastic medical meetings of a practical and scientific nature that ever was assembled in this country. Reference is here made to the meeting of the Inter-State Post Graduate Assembly of America which is directed by the Tri-State District Medical Association. They entertained twenty-four hundred physicians and surgeons from the United States and other countries. The meeting was held in the gymnasium of the Marquette university which had been especially equipped as an amphitheatre and demonstration place for those connected with the work and for the visitors. The acoustics were good and the use of a microphone with five horns made it so that every

one in the room could understand what was being said. It was evident all through the meeting that there was abundant material on hand for the clinics. The clinics were dry and were so interesting and educating that the writer feels that it might be advisable at the state meeting to at least put on two hours every morning, early, as diagnostic clinics. One had to marvel at the enthusiasm and the persistence with which these physicians and surgeons showed throughout the meeting. The meeting started at seven o'clock in the morning with an hour for lunch and an hour for dinner and continued right along every night until close to midnight. There was an earnestness and seriousness and a yearning for knowledge that I have never seen at any meeting.

The programs were mostly put on by specialists and held chairs in the various universities and who were recognized authorities in their specialties. For matter of comparison the meeting was well represented by the older and younger men in the profession. However, I think the younger men had to take their hats off to the older men, such as Dr. John B. Deaver, University of Pennsylvania; Dr. Geo. E. Brewer of Columbia University; Dr. John A. Witherspoon, Vanderbilt University; Dr. Reisman, University of Pennsylvania; Dr. Geo. W. Crile, Western Reserve University. The younger men were well represented by such men as Dr. Walter E. Dandy, John Hopkins; Dr. Stanley P. Reimann, Lankenau Hospital; Dr. Carl A. Hedbloom, University of Wisconsin; Dr. Milton C. Winternitz, Yale University and Dr. Francis H. Lahey, Harvard. Canada was well represented, led by Sir Henry Gray, Dr. Wm. B. Hendry, University of Toronto; Dr. Wm. Goldie, University of Toronto; Dr. N. J. MacLean, University of Manitoba.

The papers were all well prepared, in fact so well that one hated to miss out an hour for fear of missing out on something good while gone. Without doubt the man that created the greatest stir at this meeting was Dr. John B. Deaver. He seemed to be full of life and enthusiasm. His paper on "Surgery of Jaundice" was a masterpiece. His clinic was well attended. Dr. Geo. E. Brewer, in my opinion made the cleverest and most skillful examination that I have ever seen. Dr. Russell A. Hibbs, of Columbia University read a paper on "Treatment on Joint Tuberculosis" that brought him a big ovation. Of course, Drs. Will and Charlie Mayo received their

share of honors as did the others that were on the program.

Only one evening were we allowed to partake of amusement and that was when the meeting was adjourned at nine o'clock and the crowd went to the Wisconsin Theatre where they danced or enjoyed the show. The meetings were enlivened somewhat by a song-leader being brought in and an attempt was made to have the doctors sing several popular songs while they were standing up, and in this I would say he was just fairly successful.

In the basement of the same building were found the exhibits, and I believe everybody was represented, because the place was packed. Among those present from Nebraska were: Drs. J. A. Henske, F. J. Wearne, B. F. Crummer, Geo. P. Pratt, Herbert Davis, and Frank Conlin of Omaha; John Buis, Pender; Irvin Thompson, West Point; Drs. Minor and Hustead, Falls City; Dr. Davis, Genoa; J. M. Willis, McCook; B. J. Bailey, Wauneta; A. J. Gardner, Orleans; W. R. Neumarker, Columbus; and C. E. Frye and the writer, from Lincoln. The next meeting will be held in St. Paul, Minn.

—K. S. J. Hohlen.

SEVEN WONDERS

The modern seven wonders of the world are said to be wireless telegraphy and telephony, automobile and locomotive, aeroplane, radium, anesthetics, antiseptics and antitoxins, spectrum analysis, X-ray and other ultra-violet rays.—Med. Review of Reviews.

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces the following open competitive examination:

MEDICAL OFFICER, JUNIOR GRADE;
MEDICAL OFFICER, GRADE A;
MEDICAL OFFICER, GRADE B.

Applications for the positions of medical officer, junior grade, medical officer, grade A, and medical officer, grade B, will be rated as received until December 30. The examinations are to fill vacancies in the Indian Service, the Coast and Geodetic Survey, the Panama Canal Service, the Public Health Service, and the Veterans Bureau, at entrance salaries ranging from \$1,680 to \$3,000 a year.

Appointees to position in the Indian Service will be allowed quarters, heat, and light, free of cost. Appointees to positions in the Coast and Geodetic Survey are allowed \$2 a day for subsistence in addition to the basic salary.

The eligibles resulting from these examinations will be placed on registers and certified according to their qualifications in the following branches:

General medicine and surgery (junior and A grades only), tuberculosis, neuro-psychiatry and psychiatry, bacteriology (advanced), pathology, epidemiology, Public Health practice, industrial medicine and hygiene, and child hygiene.

Competitors will be rated on their education, training and experience.

Armour and Company announce the addition of Parathyroid and Calcium Lactate Tablets. Each tablet contains 1/20 grain of pure Parathyroids and 2½ grains Calcium Lactate U. S. P. These tablets are packed in bottles of 100 and they are obtained from drug trade and dealers in physician's supplies everywhere.

SCHOLARSHIPS AVAILABLE

"Scholarships on the Oliver-Rea Foundation for graduate study in Medicine are available at the New York Post-Graduate Medical School and Hospital.

"Inquiries should be addressed to the Dean, 301 East Twentieth Street, New York City".

STANDARDIZED HOSPITALS OF NEBRASKA

One Hundred or More Beds

Bishop Clarkson Memorial hospital, Omaha.
Nebraska Methodist Episcopal hospital, Omaha.
Nebraska Orthopedic hospital, Lincoln.
St. Elizabeth's hospital, Lincoln.
St. Francis hospital, Grand Island.
St. Joseph's hospital, Omaha.
St. Mary's hospital, Columbus.
University of Nebraska hospital, Omaha.

Fifty to One Hundred Beds

Immanuel hospital, Omaha.
St. Joseph's hospital, Alliance.
Swedish Mission hospital, Omaha.
Wise Memorial hospital, Omaha.

A BOOKLET OF IMPORTANCE IN THE PRESCRIBING OF DIETS

The dietetic importance of pure, plain, granulated gelatine has attracted so much attention, and the demand for more information has reached such a volume that the Laboratories of the Charles B. Knox Gelatine Company have prepared a book of dietetically correct recipes with gelatine for Diabetes, Nephritis, High Blood Pressure, Gastritis, Gastric Intestinal Disorders, Fevers, Constipation, Obesity, and general mal-nourishment in infants and adults.

The recipes have been most carefully worked out under authoritative auspices and with each recipe is given a quantitative analysis of Carbohydrates, fat, protein and calory value.

The book will be mailed upon request — postpaid and free of charge — by the Charles B. Knox Gelatine Company, Johnstown, New York, to any physician or dietician who requests it.

DOCTORS PLEASE RESPOND TO ROLL CALL OF RED CROSS

A request comes from the American Red Cross Society to the doctors of the State of Nebraska, asking that they cooperate with the work of the Red Cross by taking out memberships in the Red Cross for themselves and their families. It is hoped that this appeal will meet with a generous response.

THE SOCIETIES

The first Fall meeting of the Omaha-Douglas County Medical Society was held October 14, 1924, at which time a symposium of Gastric Ulcer was given. Three out-state doctors were the essayists of the evening. Dr. J. C. Waddell of Beatrice, Nebraska, very ably considered the medical aspect of this problem, illustrating his paper by three excellent slides of extremely interesting cases which had come under his observation.

Dr. Lee W. Rork of Hastings, Nebraska, showed the results accomplished by the competent x-ray specialist in helping make a diagnosis of this condition more certain for the medical and surgical associates. The various types of surgical procedures used in the alleviation of gastric ulcer symptoms was considered by Dr. B. R. McGrath of Grand Island, Nebraska.

A general discussion followed extolling the virtues of surgical treatment and statistics proving surgical treatment more advantageous in effecting a cure than prolonged medical management of the case; the laboratory and x-ray aids in diagnosis were given full credit in assisting the internist and surgeon in determining what line of treatment was best suited for the particular case in question. Those contributing to the discussion were Drs. Frank Conlin, Rodney Bliss, B. B. Davis, A. F. Tyler, W. L. Ross, M. G. Wohl, H. B. Lemere, A. C. Stokes, and C. A. Roeder.

At the meeting held October 28th, Dr. Banister, Chairman on the Committee on Public Affairs, outlined the work done by this committee in publishing five papers on medical subjects in the Sunday edition of the Omaha Bee. This work was commended by the Society in general, and a vote of thanks extended to this committee. The program of the evening consisted of two excellent papers. The first on Acute Nephritis by Dr. Rodney Bliss, with Presentation of Gross and Microscopic Sections by Dr. J. J. Keegan. About fifteen microphotographs were shown and a like number of gross specimens presented to illustrate the case histories of patients under observation at the University Hospital. Several doctors in the discussion remarked that in their opinion this had been one of the most instructive programs ever held by the Omaha-Douglas County Medical Society.

The second contribution was a paper on the Roentgenologic Diagnosis of Disease of the Biliary Tract with the aid of the Sodium Salt of Tetrabromophenolphthalein given by Dr. A. P. Overgaard. About a dozen films were used to illustrate this work after a detailed account of the technique of administering the drug had been discussed. Dr. Ballard gave additional data of cases where the same method had been used at the University Hospital, which confirmed the results obtained by Dr. Overgaard.

—Earl C. Sage.

Regular meeting of the Lancaster County Medical Society held October 8, 1924:

Dr. H. W. Orr presented an interesting discussion of "The Points in the Prevention and Control of Wound Infection". In his discussion he reviewed the progress of antisepsis from its earliest stages in the days of Lister and Pare until the present time. The larger portion of his discussion dealt with the

handling of compound fractures and of wound infection. He discouraged the continuous use of strong antiseptics, rather advocating the prevention of infection and assisting the tissues to overcome what infection was present. In discussion Dr. D. C. Hilton advocated the use of milder antiseptics such as would not retard the repair of the wound and the least manipulation possible of the troublesome areas. Dr. H. H. Waite spoke of the control of infection by the use of very mild antiseptics. Dr. A. I. McKinnon suggested that too many wounds were dressed too frequently. In closing, Dr. Orr advocated the use of mild antiseptics, not too frequent dressings and rest the affected parts.

Dr. C. Emerson presented a case of "Congenital Naevus of the Cheek and Neck" which had been cared for by surgical removal and skin transplant with excellent results.

Dr. C. Emerson presented a discussion of the subject, "The Management of Surgical Shock". He presented it from a chart showing the various states of the shock and the results upon the general system. He contended the three principal theories of shock were, neurogenic, toxicogenic and hydrogen-ion concentration. Each class of shock must be treated separately and symptomatically.

Dr. W. C. Becker in discussing the paper spoke of the shock as brought on by over-anxiety or scaring the patient during confinement. Dr. A. I. Lovel considered the shock could be largely prevented by preparing the patient in advance for that which could be expected but not feared. Dr. C. Emerson considered the careful preparation of patients and the continued care for them under the most pleasant, or the same condition, not only prevented shock but improved the condition when it had arisen.

Dr. J. M. Mayhew considered it from the standpoint of the associated nervous system unable to overcome the extra load that was put upon it by the toxic condition of the patient.

In closing, Dr. Emerson again urged the continuous care for the patient under the best conditions with the least excitement possible.

At the meeting held November 1, 1924, Dr. H. H. Waite read a paper entitled, "Chemo-Therapy". In discussion he considered the principal studies of chemo-therapy should be toward the developing of specific medication for specific infections. He pointed out that for a number of years we had been able to use certain drugs or agents against certain infections with such success that it should encourage the attempt to find the exact cure for more diseases. In the discussion, Dr. George Covey especially pointed out the use of the various vaccines and called attention to their use in combating certain diseases. He also reviewed the action of light in assisting the body to resist the action of bacteria. Dr. E. V. Wiedman spoke especially of the reaction of certain drugs in children, urging great care in administration fearing the idiosyncrasy of certain patients. Dr. J. M. Mayhew reviewed the progress of vaccine therapy and its further use in the control of specific infections. In closing, Dr. Waite urged the careful study of diseases and the administration of such medication as would more quickly combat it rather than the pernicious use of drugs.

The second paper of the evening was given by Dr. A. D. Munger. He discussed, "Chronic Seminal Vesiculitis". He considered many patients were

called neurotic who should have been positively cured after proper treatment. Too many patients were neglected, or attempted to be treated by those who had not given the condition proper study. He very strongly urged thoroughness and extreme care in studying and treating these cases. In discussion, Dr. J. J. Snipes called attention to the difficulty of curing chronic conditions and of the continuous need of keeping the patient under observation for a long period of time. Dr. E. C. Frey spoke of the necessity of relieving the patient's mind and encouraging him to follow his treatment. In closing, Dr. A. D. Munger urged the close cooperation between the urologist and the family physician in attempting to relieve the patient.

This was a very interesting meeting and epoch in the history of the Lancaster County Medical Society for at this time the new constitution and by laws were adopted and the society proceeded to incorporate thereby, hoping to build plans for a permanent home.

—D. D. Sanderson, Sec'y.

The semi-annual meeting of the Nebraska Association of Medical Women was held in Lincoln, Saturday evening, Nov. 8, at the Lincoln hotel. Dinner was served at 6:30, after which a scientific program and social interchange were enjoyed. The officers of the association this year are Drs. Inez Philbrick of Lincoln, president; Margaret Hammond of Lincoln, secretary-treasurer; Martha MacVean of Nebraska City, vice president. The scientific program consisted in a paper on Endocrine Therapy, by Dr. Emilia Brandt of Omaha; School Health, by Dr. Katharine H. K. Wolfe of Lincoln; a report of unusual cases, by Dr. May L. Flanagan of Lincoln; a report of post-graduate opportunities in New York City, by Drs. Rachel Cooper of Aurora and Daisy Hanson of Lincoln; and a report of war work in Czecho-Slovakia, by Dr. Olga Stastny of Omaha. Dr. Hulda Oelenberger, a recent graduate of the medical department of the University of Saratoff, Russian, was the guest of the association. The following members were present: Drs. Emilia Brandt, Nora Fairchild, Alace Kani, Olga Stastny and Adda Ralston of Omaha; Rachel Cooper of Aurora; Martha MacVean of Nebraska City; Dr. Emma Demaree, of Roca; Katharine Wolfe, Inez Philbrick, Ruth Flanagan, Emma Robbins, Daisy Hanson, Ruth Warner, Geno Beery, Hulda Oelenberger of Lincoln. The annual meeting of the association will be held in Lincoln on the first day of the meeting of the Nebraska State Medical association, in May next.

The Republican Valley and Tenth Councilor District Medical Society meeting at Hastings featured a symposium on the kidney. A new, and it seems to the writer an excellent, method was introduced at this meeting pertaining to discussions. All the papers were read before any discussion was called for, giving recognition to the principle that all essayists have equal right to be heard. The program follows: "The Acute Kidney", Dr. G. W. Clark; Bertrand; "The Chronic Kidney", Dr. W. H. Powell, Minden; "The Surgical Kidney", Dr. J. M. Willis, McCook; "The Congenital Kidney", Dr. C. E. Millinax, Hastings; "The kidney of Pregnancy", Dr. J. N. Campbell, Stanford; "Diabetes Mellitis", Dr. P. A. Sundbury, Holdrege; "The Expert Medical Witness", Dr. Wm. F. Dugan, Campbell.

The Scotts Bluff County Medical Society held a

very interesting session at the West Nebraska hospital, October 16, with fifteen physicians present.

Dr. T. J. Vanderhoof read a paper on "Sterility of the Female"; Dr. N. H. Rasmussen on "Postoperative Hernias".

Fifty physicians and dentists attended the Johnson County Medical Society meeting at Tecumseh, October 16th. Dinner was served after which the following program was carried out: "Sinusitis and the General Practitioner", Dr. J. J. Humpes, Lincoln; "Focal Infection", Dr. Fred W. Webster, Lincoln; "Observations of the Bowels", Dr. I. I. McKinnon, Lincoln; "Fractions of the Lower Extremities Treated by Fixed Traction". Report of cases and illustrations with lantern slides, Dr. James E. M. Thomson, Lincoln; "Ulcers of Stomach, Internist Aspect", Dr. J. C. Waddell, Beatrice; "Ulcers of Stomach, the X-ray Standpoint", with plates and lantern slides, Dr. W. A. Rush, Beatrice; "Diabetes, Practical Treatment", Dr. C. L. Hustead, Falls City. The program closed with lantern pictures of scenes in China given by Dr. A. P. Fitzsimmons of Tecumseh.

At the October meeting of the Dawson County Medical Society, the following officers were elected: Dr. J. W. Bozarth, Lexington, president; Dr. Joel Anderson, Gothenburg, secretary-treasurer; and Dr. J. H. Fochtman, Cozad, delegate.

The Seventh Councilor District Medical Society meeting was held at Crete, October 30th, about forty doctors being present. Dr. A. A. Conrad, Crete, read a paper on "Angina Pectoris"; Dr. V. V. Smrha, Milligan, gave a paper on "Ileus"; Dr. W. L. Welsh, Fairbury, discussed "Fake Cancer Cures"; Dr. George E. Neuhaus, Omaha, discussed "Nervous Children"; and Dr. M. G. Wohl, Omaha, spoke on "The Management of Diabetes from the Point of View of the Country Practitioner". After a seven o'clock dinner Dr. Morris Nielsen, Blair, state president, and Dr. A. R. Mitchell, Lincoln, member of the board of trustees of the A. M. A., spoke on the history of medicine as related to medical discoveries, modern medicine and the cults. Dr. G. A. Birdsell, Fairbury, was elected president, and Dr. H. E. Potter, councilor, was reelected secretary.

The annual meeting of the Cedar-Dakota-Dixon-Thurston and Wayne Counties Medical Society was held at Wakefield, November 6th, with about thirty members and visitors present. Very enlightening papers were read by Dr. A. D. Dunn, Omaha, on "Fundamentals in Diagnosis of Gastro-Intestinal Diseases", and by Dr. C. A. Roeder, Omaha, on the "Relationship of the General Practitioner to Major Surgery".

Officers elected for the ensuing year: J. C. Hay, Laurel, president; C. L. Philips, Dixon, secretary-treasurer, John Buis, Pender, delegate.

Brain disease was the topic under discussion at the meeting of the Custer County Medical Society, Broken Bow, October 14th. Dr. E. C. Henry and Dr. Ernest Kelly, Omaha, were the guests of honor and moving pictures illustrated the lectures.

The Fifth Councilor District Medical Society held an afternoon and evening meeting at Fremont, November 18th. About 25 doctors attended. The following program was given:

Dr. H. B. Lemere, Omaha, "Treatment of Acute Suppurative Otitis Media"; Dr. G. A. Langstaff, Blair, "A Case of Brain Tumor"; Dr. H. C. Pederesen, Fremont, "Epigastric Lesions and their Significance"; Dr. S. A. Swensen, Oakland, "Bacterin Treatment of Pertussis"; Dr. J. P. Lord, Omaha, "Osteomyelitis".

Dinner was served to the doctors and their wives at 6 P. M. and after-dinner talks were given by Dr. Palmer Findley, Omaha, president elect N. S. M. A., and by Dr. F. A. Long, Madison, Editor, on "The Journal". Drs. A. J. Brown, A. C. Stokes, Morris Nielsen and A. P. Overgaard, also spoke on call from the chairman, Dr. S. A. Preston, councilor.

The Cass County Medical Society met at Weeping Water, November 5th. Dr. A. R. Hornbeck, Murdock, was elected president and Dr. C. H. Longacre, Eagle, was reelected secretary-treasurer.

Dr. F. F. Teal, Lincoln, presented a paper on "Causes and Treatment of Sinus Infection", which was discussed from the viewpoint of the urologist by Dr. A. D. Munger, Lincoln, and from the viewpoint of the surgeon by Dr. Clayton F. Andrews, Lincoln.

HUMAN INTEREST TALES

Dr. F. W. Boland, formerly of Auburn, has located at Howell.

Dr. Herbert Davis, was elected president of the Omaha Clinical club.

Dr. A. L. Schneider, formerly of Brady, has located at Henderson.

Dr. C. G. Moore, Fremont, has become head of the local Legion post.

Dr. A. E. Gadbois, Norfolk, attended the Kansas City fall clinics in October.

Dr. and Mrs. J. B. Potts, Omaha, have returned from a 3 months' sojourn in Europe.

Dr. A. S. Main, Loup City, was elected to the lower house of the Nebraska legislature.

By the will of the late Eugenia Earle, Omaha, \$25,000 is to be left to victims of leprosy.

The Verges Sanitarium, Norfolk, is again in operation after a short respite during the summer.

Dr. and Mrs. W. F. Milroy, Omaha, recently returned from a six weeks' sojourn in New York City.

Dr. and Mrs. A. D. Dunn, Omaha, visited Chicago, Milwaukee and Madison, Wisconsin, during October.

Dr. W. R. Talboy, Newcastle, was elected to the lower house of the Nebraska legislature at the fall election.

Dr. J. H. Thompson has moved his office from Monroe to Elba. The family will remain at Monroe until spring.

The marriage at Oak Park, Ill., of Dr. Robt. S. Martin and Miss Rachel Cowden, both of Red Cloud, Nebr., is announced.

Dr. and Mrs. C. B. Foltz, Omaha, attended the annual convention of the Amateur Athletic Union at Atlantic City in mid-November.

Dr. O. A. Kostal, recent interne of the Methodist hospital, Omaha, has located at Gilmer, Nebr., succeeding the late Dr. J. S. Wainwright.

The complaint against Dr. George Gilbert, Omaha,

for selling narcotics, was dismissed by virtue of the federal grand jury not finding a true bill.

Dr. P. T. Conlan, wife, son and daughter, Omaha, sustained severe injuries in an auto collision on the Washington highway near Sioux City, October 19.

Dr. W. L. Shearer, Omaha, lectured before the Oklahoma State Dental society at Tulsa and before the American Dental Association at Dallas, Texas, in November.

Dr. S. G. Sonneland, for the past year connected with the Cleveland Clinic Foundation under Crile, spent the summer and fall at Norfolk with his brother, Dr. A. M. Sonneland.

Dr. James J. Walsh, New York City, neurologist and author, lectured in Omaha early in November and was entertained by several medical bodies and by Dr. and Mrs. G. Alexander Young.

Dr. A. V. Hill, professor of physiology of the University of London, Nobel prize winner for 1923, lectured before the students of the University college of medicine, Omaha, October 29th.

Dr. H. C. Sumney, Omaha, returning from his annual vacation in the Canadian Woods several hundred miles north of Montreal, brought the evidences of having brought down a moose.

A Wymore physician has been sued by a former patient for \$75,000, the allegation being that the physician treated him for rheumatism, when an x-ray taken later showed that he had a broken hip.

Nebraska doctors noticed at the clinical congress in New York City in October were: Drs. B. B. Davis, John R. Nilsson, W. L. Shearer, Geo. F. Simanek, L. E. Moon, Omaha; H. M. Hepperlin, Beatrice; C. A. Allenberger, F. H. Morrow, Columbus; J. S. Welch, C. F. Andrews, Lincoln; A. A. Smith, Hastings.

U. S. General Hospital No. 123—Reserve has been authorized and organized at St. Elizabeth's Hospital, Lincoln, Nebr. The Surgeon General has assigned Colonel Czar C. Johnson, Med. ORC. to command this unit. Colonel Johnson was formerly a Lt. Colonel Med. ORC., serving with the American Expeditionary Forces in the World War. The officer personnel enlisted for this hospital includes the prominent surgeons, internists, and specialists of Lincoln as well as prominent professional and business men. There are a few vacancies in the Medical section to be filled before the full complement of officers has been perfected.

NECROLOGICAL

Dr. R. H. Morse, Wisner, Nebr.; Creighton Medical College, 1902; a well known practicing physician at Wisner for twenty-two years, died suddenly in an auto while on the way to Omaha to consult a specialist, October 25th, of an organic heart affliction, aged 50 years. He was in the medical corps of the army during the Mexican border troubles, 1916, and at Ft. Riley near the close of the World War. He was much interested in civic and community affairs. Dr. Morse leaves a widow, Dr. Marie Hansen-Morse, and four children.

Dr. E. J. Garver, Los Angeles; State University of Iowa, 1889; sometime a practitioner at Pender and Beatrice, Nebr., died in Los Angeles the latter part of October, aged about 66 years.

THE NEBRASKA STATE MEDICAL JOURNAL



ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. IX.

Norfolk, Nebraska, January, 1924

No. 1

CALCREOSE

Tablets
Powder
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PULMONARY TUBERCULOSIS

In many cases cough is indispensable and is best treated by promoting expectoration. For this purpose, creosote is a reliable remedy.

—(Stevens Manual of Practice of Medicine, p. 384)

Calcreose (calcium creosotate) is a mixture of approximately equal parts of beechwood creosote and calcium, which possesses the pharmacologic activity of creosote but apparently does not cause gastro-intestinal disturb-

ances.

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Farnam at Seventeenth

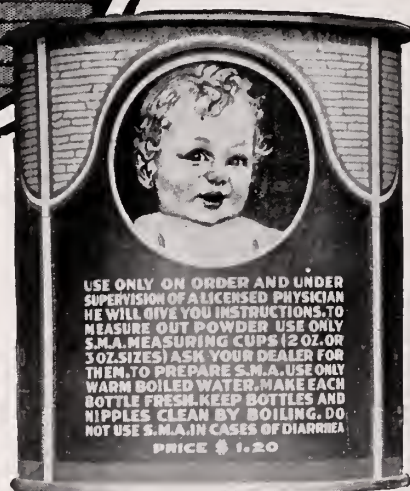


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A real doctor writes his feeding formula just as he does any other prescription and changes it from time to time to suit the requirements of the individual infant. His name and reputation are at stake. The baby's nutrition must be considered and possibly its life may be saved by proper food.

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Reform Eye

KIND OF EYE

REFORM

SHELL

RIGHT

LEFT



Shape of Right Eye
(Notch up when inserted)



Shape of Left Eye
(Notch up when inserted)



Shell eye



VERY LARGE



LARGE



MEDIUM



SMALL



VERY SMALL

SIZE OF EYE

VERY LARGE

LARGE

MEDIUM

SMALL

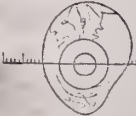
VERY SMALL

SIZE OF IRIS

SMALL

MEDIUM

LARGE



Measurement for
Width.

COLOR OF IRIS

BROWN

HAZEL

BLUE

GRAY

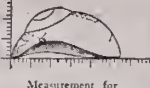
SIZE OF SCLEROTIC

WHITE

BLUISH

YELLOWISH

PINKISH



Measurement for
Length and Height

MARK CIRCLE AROUND KIND AND DESCRIPTION WANTED

SEND TO...

SEND OLD EYE FOR SAMPLE, IF POSSIBLE
EYES SENT ON MEMORANDUM AT RISK OF CONSIGNEE

Miniature Facsimile of Our New Artificial Eye Order Blank

The use of this blank to draw from our extensive stocks of artificial eyes, makes certain that your patient will be satisfactorily cared for.

Please write for sample blanks.

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THE NEBRASKA STATE MEDICAL JOURNAL



ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. IX.

Norfolk, Nebraska, March, 1924

No. 3

CALCREOSE

Tablets
Powder
Solution



Creosote in Tuberculosis

"It is again coming into favor. There seems to be no doubt but that it has a very definite effect in reducing expectoration and in lessening purulency. As a certain amount of the drug is excreted by the bronchial mucous membrane, this may explain, in part, its beneficial effects."—John Gey: Pulmonary Tuberculosis; Its Diagnosis and Treatment, 1923, p. 252.

Calcreose (calcium creosotate) is a mixture of approximately equal parts of beechwood creosote and calcium. It possesses the pharmacologic activity of creosote, but, apparently, does not cause the gastro-intestinal disturbances to which patients object. Therefore CALCREOSE can be administered for comparatively long periods of time in large doses.

Sample of Tablets on request

The Maltbie Chemical Company - Newark, New Jersey



A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

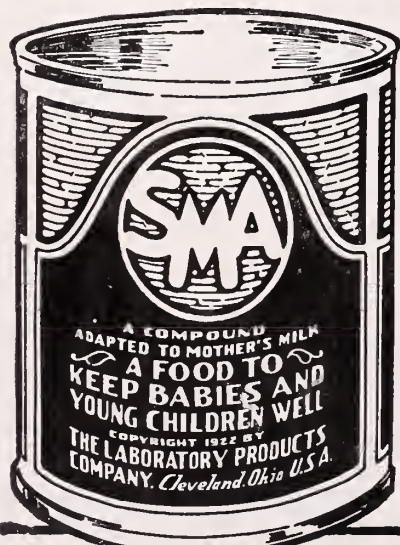
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Over 300%

MORE than three times as much S.M.A. was prescribed in 1923 as in 1922. We believe that the physician who has used it will understand the reason, for he is already aware of the assistance which S. M. A. has given him in his own practice, and he will see in this increase convincing evidence that many other physicians are also obtaining exceptional nutritional results with S. M. A.

From 1915 to 1920 S. M. A. was used only in The Babies' Dispensary and Hospital of Cleveland. In January, 1920 it was made available to all Cleveland physicians. In November, 1921, its distribution was extended so that every physician in the country might obtain it for his little patients. From the time that S. M. A. was first offered to the medical profession, there has been a steady increase in the number of physicians using it, and in the volume prescribed by them.



S. M. A. is a food for infants deprived of breast milk, or who require nourishment in addition to what the mother can supply.

Requires only the addition of boiled water to prepare. Needs no modification or change for normal infants.

Prevents rickets and spasmophilia. Promotes normal growth and development.

Formula by permission of The Babies' Dispensary and Hospital of Cleveland. For sale by druggists on the order of physicians.

Literature and samples to physicians on request. The Laboratory Products Company, Cleveland, Ohio.

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Better Babies

There is a difference between PROPER NOURISHMENT for the baby and—just some kind of food.

Success

Physicians agree that successful infant feeding begins with

BREAST MILK

Pediatrists are constantly furnishing newer knowledge on
Prolonged Lactation.
Reestablishment of Breast Milk after the Breast is Dry.
Overfeeding.
Underfeeding.
Colic of Breast Nursed Infants.
Instructions to Mothers at time of Baby's Birth.
Retracted and Spastic Nipples.
Premature Infants.
Lack of Education of Mothers.

These data will be found in our pamphlet entitled:

"Breast Feeding and the Reestablishment of Breast Milk"

Equipment

When breast milk is not obtainable the following equipment furnished by MEAD will aid the physician to obtain gratifying results in artificial infant feeding:

MEAD'S PEDIATRIC TOOL KIT

contains File Index of Corrective Diets, Weight Charts, Prescription Blanks, History Charts, Diets for Older Children, Instructions for Expectant Mothers, Pedigreed and Certified Cod Liver Oil, Dextri-Maltose, Florena, Arrowroot Flour, Oat Flour, Barley Flour, Casec, other helps. This equipment is an aid to the management of the diet of well babies and sick babies and is of great assistance to obtain co-operation from mothers. It is free.

Mead's Infant Diet Materials assist the physician to obtain CONTROL and eliminate CONFUSION.

THE MEAD JOHNSON POLICY

Mead's Infant Diet Materials are advertised only to physicians. No feeding directions accompany trade packages. Information in regard to feeding is supplied to the mother by written instructions from her doctor, who changes the feedings from time to time to meet the nutritional requirements of the growing infant.

Mead Johnson
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and Company
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An Institution Devoted to the Study of Infant Nutrition.

Castle Sterilizer

This electrically heated sterilizer has many good features of construction. A double lever raises the hinged cover and simultaneously the perforated tray containing the instruments. This feature eliminates the danger of the hands being burned by the escaping steam and brings the instruments out of the water where they can be conveniently handled. Other features of advantage are the switch by means of which "low," "medium," or "high" degree of heat is obtainable and the faucet at the other end of the sterilizer permits draining off the water. The instrument is protected by an improved electrical cutoff which shuts off the electricity when the sterilizer becomes hot to a dangerous degree through boiling away of the water. Number 410s size $10\frac{1}{2} \times 3\frac{1}{4}$ is \$46.25. For gas instead of electrical heating the price is \$15.00 less.



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Be your practice of fitting glasses large or small, it will pay you to send us your prescriptions. At any Riggs office, your requirements are given personal attention. The glasses are made up exactly as you prescribe in every detail. They are returned promptly. You receive courteous, efficient service. Our large stocks of all lines of quality products, our well equipped plants, our force of careful employees, makes possible a class of prescription work that cannot be surpassed. Whatever you may need in optical goods can be secured here and we will welcome the opportunity to serve you.



Bausch & Lomb Microscope

This B & L Model FFS scope is especially adapted to bacteriological work. It is provided with the B & L patented side fine adjustment which ceases to operate when objective touches slide. Stage is covered with vulcanized rubber and fitted with a substage in which the Abbe condenser is focused by a quick-acting screw. Coarse adjustment is by rack and pinion with stop to prevent pinion from overriding track. The stand has inclination joint with horizontal and vertical stops. Finish is alcohol and reagent-proof. Case is of hardwood with brass lock and key.

BAUSCH & LOMB FFS with Abbe condenser, iris diaphragm, triple nosepiece; 16 mm, 4 mm, 1.9 mm oil immersion objectives 5x and 10x eyepieces. Complete in case \$125.00

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THE NEBRASKA STATE MEDICAL JOURNAL



ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. IX.

Norfolk, Nebraska, April, 1924

No. 4

CALCREOSE

Tablets
Powder
Solution



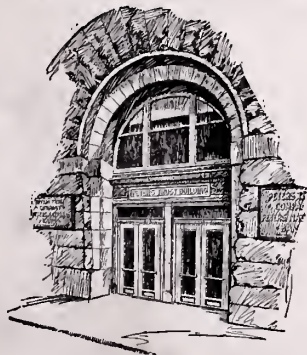
Creosote in Tuberculosis

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Sample of Tablets on request

The Maltbie Chemical Company - Newark, New Jersey



A Suggestion to Professional Men

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The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY

Farnam at Seventeenth

What is S. M. A.?

S. M. A. is an adaptation to breast milk which resembles breast milk both physically and chemically.

S. M. A. in addition to giving excellent nutritional results in most cases, also prevents nutritional disturbances such as rickets and spasmodic.

S. M. A. requires no modification or change for normal infants. As the infant grows older the quantity is merely increased.

S. M. A. requires only the addition of boiled water to prepare.

(Orange juice, of course, should be given the infant fed on S. M. A., just as it is the present practice to give it to breast-fed infants.)

Why was S. M. A. developed?

Because there is a real need for an adaptation to breast milk which will give satisfactory nutritional results in the great majority of cases, which includes the preventive factors, and which is, at the same time, so simple

to prepare that the physician can rely on the mother to follow his directions accurately.

How is it possible to feed S. M. A. to infants from birth to twelve months of age or longer without dilution or change?

The answer to this question sounds the keynote of the success which thousands of physicians are having with S. M. A. It is not necessary to modify S. M. A., for *the same reason that it is not necessary to modify breast milk*:—for S. M. A. resembles breast milk not only in its protein, carbohydrate and salt content, but *also* in the character of the fat. Since the very young infant can tolerate the fat, as well as the other essential constituents in S. M. A., it is possible to give this food, *in the same strength*, to normal infants *from birth to twelve months of age, or longer if desired*.

As the infant grows older, therefore, it is only necessary to increase the amount of S. M. A.



Samples and literature to physicians on request.

S. M. A. is to be used only under the direction of a physician. For sale by druggists.

Formula by permission of The Babies' Dispensary and Hospital of Cleveland.

THE LABORATORY PRODUCTS CO.
Cleveland, Ohio

MEAD'S

Better Babies

Simplified Infant Feeding

First Thought

BREAST MILK

No system of feeding so simple and satisfactory as breast nursing the infant has ever been devised.

Every infant should have an opportunity to obtain Breast Milk, hence our sincere efforts to furnish ways and means of prolonging lactation in the mother, without the use of drugs or concoctions, are fully described in our pamphlet entitled

"Breast Feeding and the Reestablishment of Breast Milk"

Artificial Feeding

The value of Mead's Dextri-Maltose in average babies is many times multiplied by the confidence of physicians who prescribe it in their infant feeding milk modifications. Mead's Dextri-Maltose represents an ethical ideal. Moreover, the combination of Mead's Dextri-Maltose, fresh cow's milk and water gives gratifying results.

DIARRHOEAS IN BREAST FED AND BOTTLE FED BABIES respond to a diet of Mead's Casec or Mead's Powdered Protein Milk.

EVERY INFANT, whether breast fed or bottle fed, should receive the protective antirachitic value of Mead's P & C Cod Liver Oil.

The infant diet materials advertised here, when used by the physician, will meet the nutritional requirements of a large number of well and sick babies.

Please tear out this coupon and send for the following:

1. Pamphlet on Breast Feeding.
2. Sample and literature on Mead's Dextri-Maltose.....Mead's Casec.....Mead's Powdered Protein Milk.....Mead's Cod Liver Oil.....Mead's Tool Kit for Individualized Infant Feeding.....

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Address

City..... State.....

The Nebraska State Medical Journal, April, 1924.

Mead Johnson
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THE PERFECT LENSES

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DRY CLINIC NUMBER

THE NEBRASKA STATE MEDICAL JOURNAL



ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. IX.

Norfolk, Nebraska, May, 1924

No. 5

CALCREOSE



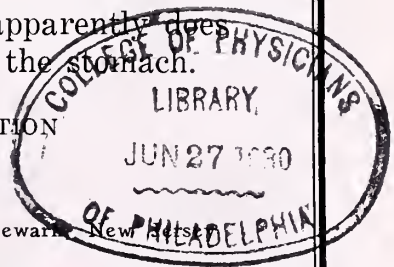
"CREOSOTE seems to be of value in cases of chronic fibroid disease with copious expectoration, in patients with a secondary infection or with chronic bronchitis, and in some early cases with dyspepsia and intestinal fermentation." R. A. Young: *Lancet* 1:484 (March 8) 1924.

CALCREOSE (calcium creosotate) is a mixture containing in loose chemical combination approximately equal weights of creosote and lime. It differs from creosote in that it apparently does not have any untoward effect on the stomach.

POWDER—TABLETS—SOLUTION

Samples of Tablets on Request

THE MALTBIÉ CHEMICAL COMPANY, Newark, N. J.



A Suggestion to Professional Men

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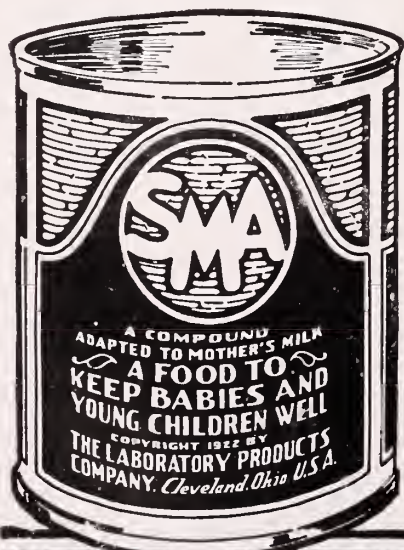
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Formula by permission of The Babies' Dispensary and Hospital of Cleveland.

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MEAD'S

Better Babies

The most important factor in the development of a Nation is

The Birth and Rearing of Children

No food is more important during the first year of life than BREAST MILK.

The best substitute for Breast Milk is Fresh Modified Cow's Milk.

Every baby, whether bottle-fed or breast-fed, should be under the supervision of a physician.

Many physicians have learned:

The value of Mead's Dextri-Maltose in the Modification of Cow's Milk.

The value of Mead's Casein in Fermentative Diarrheas.

The value of Mead's Cod Liver Oil to protect the infant from rickets.

The value of MEAD'S POLICY.

THE MEAD JOHNSON POLICY—Mead's Infant Diet Materials are advertised only to physicians. No feeding directions accompany trade packages. Information in regard to feeding is supplied to the mother by written instructions from her doctor, who changes the feedings from time to time to meet the nutritional requirements of the growing infant. Literature furnished only to physicians.

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IN our judgment, the Twintex frame illustrated above, which is the light weight in the Twintex family of new-day frames, is superior to any frame in its class. It has a revolutionary, double grip, double brace, wobble-proof end piece construction, which has made Twintex the outstanding frame success of the past decade.

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THE NEBRASKA STATE MEDICAL JOURNAL



ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. IX.

Norfolk, Nebraska, June, 1924

No. 6

Summer Colds

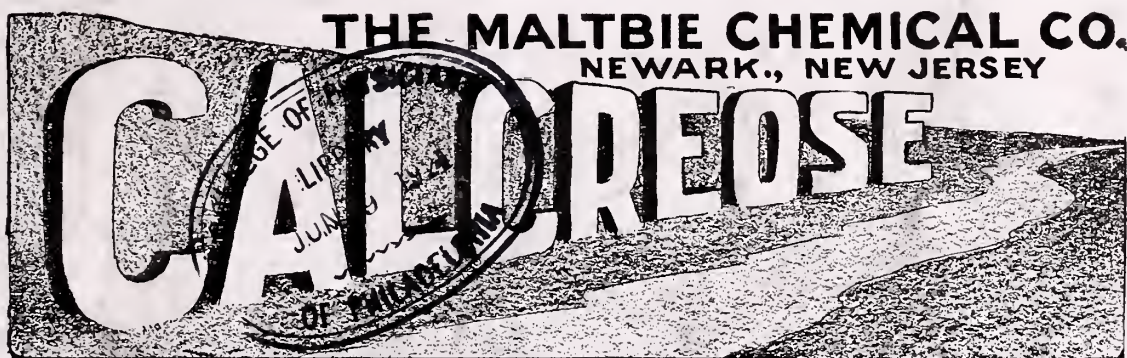
This is the time for summer colds to develop. Everyone knows how resistant they are to treatment and that disastrous complications may arise.

TRY CALCREOSE

CALCREOSE (Calcium creosotate) is a mixture containing in loose chemical combination approximately equal weights of creosote and lime. It has the pharmacologic activity
POWDER — TABLETS — SOLUTION

of creosote as used in the adjuvant treatment of tuberculosis, but differs from creosote in that it apparently does not have any untoward effect on the stomach.

SAMPLES of TABLETS on REQUEST



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Farnam at Seventeenth

“Excellent nutritional results in most cases”



Adapted to
Breast Milk



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Dispensary and Hospital
of Cleveland



To be used only on
the order of
physicians



For sale by druggists

This is the reason
why thousands of
physicians have
found S. M. A.
helpful in their
work of feeding
infants deprived of
breast milk.

THE LABORATORY PRODUCTS CO.
Cleveland, Ohio

Literature and samples to physicians on request

MEAD'S

LIVE FOOD

for Babies

There is none so good

First thought

BREAST MILK

Second thought

FRESH COW'S MILK

Water and

MEAD'S DEXTRI-MALTOSE

FOR YOUR CONVENIENCE

Pamphlet
on
Breast Milk



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Very attractive cases of new design for ALL-ZYLO and the popular ZYLO-Combination Frames. Finished neatly with a fibre band inside which prevents their flattening or getting out of shape. Your patients will like them for their smart, distinctive shape and grain.

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Genuine High Quality Leather

Stock No.	Description	ALL STYLES MODERATELY PRICED
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No. 501-A	Arrow Grain Black Long Style	
No. 501-BC	Cow Hide Brown Long Style	
No. 502-P	Pearl Grain Black Short Style	
No. 502-BC	Cow Hide Brown Short Style	

Please Note.—No. 501 size designed for skullfit frames; No. 502 for riding low and flexible temple frames.

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NEWARK., NEW JERSEY

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You, too, can now Administer Chlorine Gas

The Following Record

compiled by Lt. Col. E. B. Vedder, M.D. and Capt. H. P. Sawyer, M.D. (Medical Corps, U. S. A.) shows the remarkable results secured by employing CHLORINE GAS for the treatment of respiratory diseases. (Reproduced from the A. M. A. Journal of March 8, 1924).

Diagnosis	No. of Cases	Cured		Im-proved		No Change	
		No.	%	No.	%	No.	%
Coryza	388	288	74.2	91	23.5	9	2.3
Acute laryngitis and pharyngitis	127	99	78.0	24	19.0	4	3.1
Acute bronchitis	241	192	80.0	47	19.5	2	0.5
Chronic rhinitis	106	33	31.1	41	38.6	32	30.2
Chronic bronchitis	47	34	72.3	12	25.5	1	2.1
Chronic laryngitis	2	2	100.0				
Whooping cough	9	8	88.8	1	11.1		
Influenza	11	9	81.8	2	18.1		
	931	665	71.4	218	23.4	48	5.1

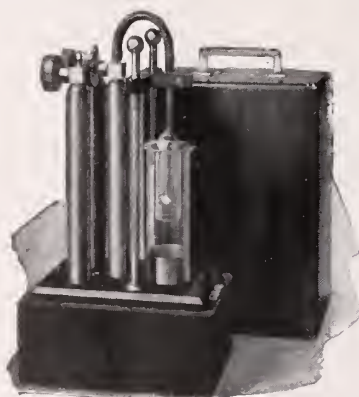
for the treatment of common colds, influenza, bronchitis, whooping cough, laryngitis and other respiratory diseases. A portable self-contained machine makes this advanced practice available to all members of the medical profession.

THE DOYLE Chlorinometer

TRADE MARK

makes possible the scientific administration of chlorine gas, in your office or the homes of your patients. No special rooms or preparations are needed. Just close the doors and windows of any room and set the "Chlorinometer" in operation.

The "Chlorinometer," simple and thoroughly reliable, has been created out of the experience of this Company's years of specialization in the designing and building of gas control apparatus. If used according to instructions, it cannot fail to give absolute satisfaction.



Each machine is accompanied by complete, detailed instructions which will enable any physician to secure uniformly successful results. The price of the "Chlorinometer," complete with polished walnut carrying case, latest model as illustrated, is \$60.00 F.O.B., New York.



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Scientific Apparatus Co.

(A CORPORATION)

17 WEST 60TH STREET, NEW YORK CITY

Pioneers in the Development and Manufacture of Gas Control Apparatus for the Medical Profession

MEAD'S

PREVENTING NUTRITIONAL DISTURBANCES IN INFANTS

By far the largest majority of children that are brought to hospitals suffering from severe nutritional disturbances are victims of serious errors made by parents who failed to consult their physicians, and who attempted to feed their babies without a doctor's advice.

If all babies were under a competent physician's care, infant mortality would be surprisingly reduced.

MEAD JOHNSON AND COMPANY realize that the *physician is the only one capable of feeding babies successfully*. MEAD'S INFANT DIET MATERIALS, therefore, have no directions on the package, the mother gets her feeding instructions *only* from her doctor and follows his advice throughout the feeding period.

MEAD'S DENTRI-MALTOSE, Fresh Cow's Milk and Water will give gratifying results in feeding a large majority of bottle babies.

MEAD'S CASEC and MEAD'S POWDERED PROTEIN MILK are splendid for fermentative diarrhoeas.

Sample and literature sent at the physician's request.

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MEAD JOHNSON AND COMPANY

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MAKERS OF INFANT DIET MATERIALS EXCLUSIVELY.

Yours is a Big Responsibility, Doctor

To examine the eyes of each patient thoroughly—to diagnose every symptom properly—to arrive at the one optical correction necessary in each case is truly a big responsibility. But your responsibility can't end there. The glasses delivered to your patient must be precisely as you order. Your reputation and success depend on that. One sure way of giving your patients exactly what you want them to wear is to have us do your Rx work.



You have spent years in studying for your profession. You have trained yourself by experience and provided yourself with the necessary refracting equipment. The growth of your practice depends largely on the ultimate results of your examinations—results which are usually obtained through the medium of glasses. At any Riggs house your prescriptions are always of first importance. They will be filled correctly.



Each employe in the entire organization makes a personal pledge to give closer attention and render better service in meeting all your optical needs than you can secure elsewhere. Give us a trial, please.



To whom would you entrust a prescription for your own children? Nothing short of the very best would be good enough for them. Wouldn't your patients respond to like consideration? Send all your prescriptions to Riggs.

A Riggs manager takes pleasure in giving your work his personal attention. He is experienced, capable and thoroughly reliable in every way.



Why not be as particular in choosing your wholesale optical house as your patients are in choosing their refractonist? When you do that you will surely send your prescriptions and orders to Riggs. For nowhere else will you find the equal of the personal, prompt and satisfactory service which awaits you here. The best answer to your prescription question is the Riggs house nearest you.

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THE NEBRASKA STATE MEDICAL JOURNAL



ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. IX.

Norfolk, Nebraska, August, 1924

No. 8

General Medication in Tuberculosis

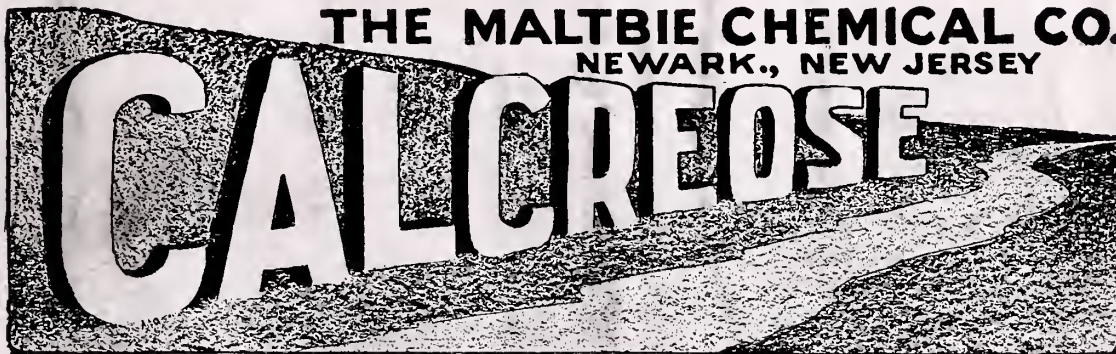
"CALCIUM—Certain it is, that patients, especially children, often improve with increased amounts of calcium in their food or as a medication."

"CREOSOTE—It seems to be true that many patients have improved appetite under its stimulant or irritant action in the stomach. It may also for a time improve digestion, and the patient adds weight. During this period there is frequently a lessening of the bronchitis, and, therefore, is likely to be less fever and, therefore, less sweating." A. M. A.: Handbook of Therapy, Ed 6, p. 201.

CALCREOSE (calcium creosotate) is a mixture containing in a loose chemical combination approximately equal weights of creosote and lime. It has the pharmacologic activity of creosote but apparently does not have any untoward effect on the stomach.

Samples of Tablets on Request.

THE MALTBY CHEMICAL CO.
NEWARK, NEW JERSEY



A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

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No useless or unnecessary appliances or attachments furnished with this machine.

Produces high temperatures without irritation. The currents are soft, smooth and voluminous; and the control, through the impedance coil and the TUNGSTEN TIPPED MULTIPLE SPARK GAP, provides the most delicate regulations.

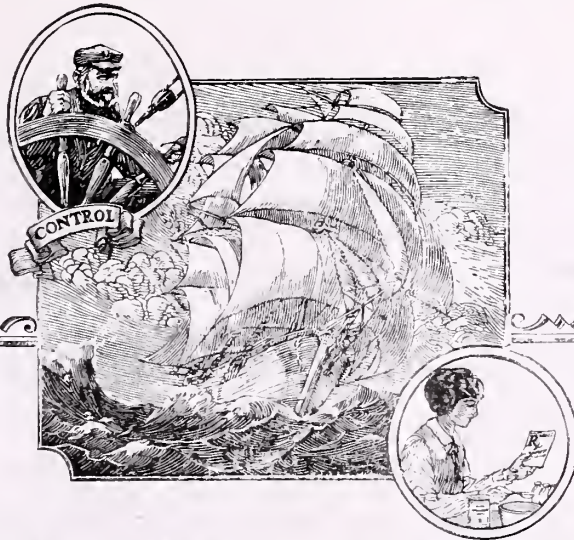
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The Control of Infant Feeding

The Baby who is under a Physician's Supervision is like a Ship in the Hands of an Experienced Captain.

The ship is responsive to every turn of the wheel—the crew obeys every command of the captain—the *captain controls* his ship.

When the doctor prescribes a feeding formula on his own prescription blank the mother obeys his instructions, and the baby is responsive to his diet. Mead's Infant Diet Materials have no directions on the package to interfere with the doctor's prescription—the *doctor controls* his infant feeding *throughout the entire feeding period*.

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Mead's Dextri-Maltose (Dextrins and Maltose) is assimilated by infants in greater amounts than other sugars before reaching the limit of tolerance and is less liable to cause digestive disturbances. Mead's Dextri-Maltose, cow's milk, and water, gives gratifying results in the majority of infants intrusted to the physician's care.

MEAD'S CASEC

Cow's Milk and Water

Many physicians are finding protein milk helpful in their cases of summer diarrhoea. Protein milk made with Casec enables the mother to follow easily and accurately her physician's instructions—it will not clog the nipple. With Casec the percentage of protein can be governed by the physician at will.

Samples of DEXTRI-MALTOSE and CASEC, together with literature describing their use will be sent to any physician on request.

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Mead's Infant Diet Materials are advertised only to physicians. No feeding directions accompany trade packages. Information in regard to feeding is supplied to the mother by written instructions from her doctor, who changes the feedings from time to time to meet the nutritional requirements of the growing infant. Literature furnished only to physicians.

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Our endeavor has always been, and always will be, to supply the very best. In our prescription work we employ not only the very best workmen and methods, but also the finest lenses.

Prescriptions calling for Crookes, for instance, are filled with Bausch & Lomb Crookes Glass. This glass, in shades No. 1, No. 2 and No. 3, has uniform absorption qualities, and is carefully inspected for all possible defects before it leaves the factory.

*Your prescriptions will be filled
accurately if you send them to us*

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No. 9

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Samples of Tablets on Request.

THE MALTBY CHEMICAL CO.
NEWARK., NEW JERSEY

CALCREOSE



A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

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The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

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The Doctor can feel sure ~

THROUGH mile after mile of bleak, snow-blanketed country, the Alaskan doctor drives his sledge and team of huskies, striving to reach some sick man, woman or child on this edge of the world, before it is too late. And his ability to serve is sustained by his faith in the medicines he uses.

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Specify "MILLIKEN" in prescribing

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MEAD'S

PREVENTING NUTRITIONAL DISTURBANCES IN INFANTS

By far the largest majority of children that are brought to hospitals suffering from severe nutritional disturbances are victims of serious errors made by parents who failed to consult their physicians, and who attempted to feed their babies without a doctor's advice.

If all babies were under a competent physician's care, infant mortality would be surprisingly reduced.

MEAD JOHNSON AND COMPANY realize that the *physician is the only one capable of feeding babies successfully*. MEAD'S INFANT DIET MATERIALS, therefore, have no directions on the package, the mother gets her feeding instructions *only* from her doctor and follows his advice throughout the feeding period.

MEAD'S DENTRI-MALTOSE, Fresh Cow's Milk and Water will give gratifying results in feeding a large majority of bottle babies.

MEAD'S CASEC and MEAD'S POWDERED PROTEIN MILK are splendid for fermentative diarrhoeas.

Sample and literature sent at the physician's request.

THE MEAD JOHNSON POLICY—Mead's Infant Diet Materials are advertised only to physicians. No feeding directions accompany trade packages. Information in regard to feeding is supplied to the mother by written instructions from her doctor, who changes the feedings from time to time to meet the nutritional requirements of the growing infant. Literature furnished only to physicians.



MEAD JOHNSON AND COMPANY
Evansville, Indiana

MAKERS OF INFANT DIET MATERIALS EXCLUSIVELY.

Grinding Lenses Where Accuracy Is or It Isn't

The grinding of ophthalmic lenses is almost a profession in itself. Truly it ranks among the foremost of skilled mechanical trades. Each operation must be as near perfection as human skill can be perfected.

Think of the minute care which must be given to making the finest watch you know. Then remember that the lenses you prescribe are here ground more accurately than the workmanship in any watch ever made.

With RIGGS workman there is only one standard for lens grinding — right or wrong.

The prescription you give is their master guide. The lens must be that exactly. When the job is finished it is either right or wrong, measured by this standard.

When the lenses are right you get them; when wrong they're smashed on the floor beneath their feet.

No artisan, no mechanic, yes, no professional man takes greater pride in his skill and determination to produce the finest work possible than does the lens grinder in a RIGGS organization.

Verily your prescription work is safe with us.



Personal Attention

to every prescription by
manager or assistant

AT the time when the managers of most firms are enjoying their beauty sleep, your RIGGS manager and his assistants are already busy at their work.

They are opening the morning mail, putting each prescription in an individual tray and giving such special instructions or directions as are necessary for the proper completion of your work.



On each job they mark the time in which your glasses must be finished to be returned to you on time. Then throughout the day they see that every detail of your requirements is taken care of exactly as you prescribe.

This personal attention from early till late, from start to finish; this elimination of chance in your prescription work means much to us but it means a great deal more to you.



It means that your glasses are here made as carefully as if done under your own direct supervision.

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Vol. IX.

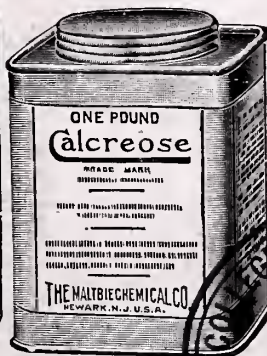
Norfolk, Nebraska, October, 1924

No. 10

CALCREOSE

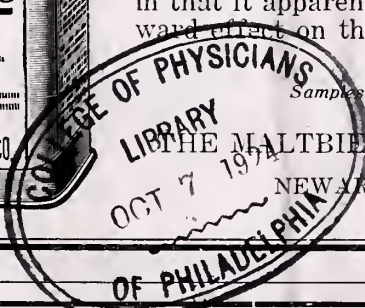
HOW TO GIVE CREOSOTE

POWDER
TABLETS
SOLUTION



In bronchitis, especially the bronchitis accompanying pulmonary tuberculosis, and in other conditions in which it is desired to administer creosote, the irritant action of creosote in the stomach may be avoided by administering **CALCREOSE** (calcium creosote) a mixture containing in loose chemical combination approximately equal weights of creosote and lime. It differs from creosote in that it apparently does not have any untoward effect on the stomach.

Samples of Tablets on Request



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PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

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Wellsworth Cruxite Lenses

New Comfort for the Eyes

The only ultra-violet absorbent lens which transmits practically all of the visible spectrum has been introduced to the country by Wellsworth National Advertising.

Years of study and research have produced the Wellsworth Cruxite lens—as the new product is known. It has a faintly pinkish tint, giving the effect of white crown glass when worn. It casts no disfiguring shadow—it actually enhances the appearance of the wearer.

Wellsworth Cruxite quality is patented and protected in every way, and the name is registered. Its faculties for absorption of ultra-violet, and transmission of visible rays will remain constant in all melts. You are invited to verify any Wellsworth Cruxite lens by submitting it to a reliable spectro-photometric laboratory for test.

“THE WORLD’S FINEST GLASS”

Your patients will appreciate your judgment in recommending and prescribing CRUXITE.

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Send us your next R and mark it CRUXITE.

For the ultimate in spectacleware and superior prescription service why not send your optical work to America's leading and foremost optical institution.

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Catalog and prescription supplies on request

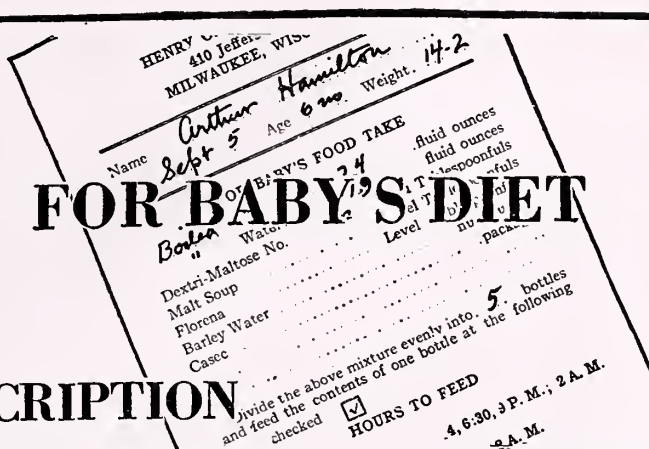
American Optical Company

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All prescription orders executed the same day as received.



FOR BABY'S DIET

A PRESCRIPTION

A written prescription is definite and cannot be forgotten.

It also carries with it the authority of the doctor himself.

It is individual—and its individuality shows that *thought* has been given to the baby's individual requirements—the mother is much more interested in her physician's judgment and much less apt to take cognizance of outside interference.

A prescription of

FRESH COW'S MILK, MEAD'S DEXTRI-MALTOSE AND WATER not only gives gratifying results for the average baby but also establishes confidence between the mother and the doctor.

MEAD'S DEXTRI-MALTOSE *can only be prescribed by the physician*—there are no directions on the package.

When **DEXTRI-MALTOSE** is used as the added carbohydrate of the baby's food the physician himself *controls* the feeding problem.

MEAD'S P & C COD LIVER OIL

A dependable cod liver oil of known origin. Exceptionally high in antirachitic, antiophthalmic and growth values. Mild in taste and well tolerated.



MEAD'S CASEC

For preparing a milk modification high in protein and correspondingly low in carbohydrate. For use in Fermentative Diarrhoeas and Marasmus.

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EVANSVILLE, INDIANA, U. S. A.

NOTE: We will be glad to print, with the physician's name and address, a set of prescription blanks for use in his infant feeding cases.

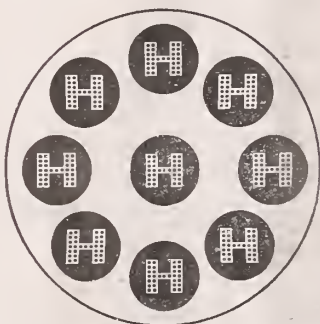
MEAD JOHNSON & CO., Evansville, Ind.
Please send me "No Charge"

- ☐ A Set of Prescription Blanks
- ☐ Samples and Literature, Mead's P & C Cod Liver Oil
- ☐ Samples and Literature, Mead's Dextri-Maltose.
- ☐ Samples and Literature, Mead's Casec

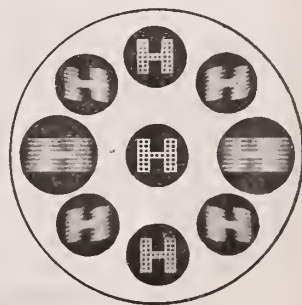
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Nine Reasons for Punktal Popularity



Images as seen through Punktals. Photographs taken through a Punktal lens, at the center and at eight positions each 30° from the axis.



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- 1 Punktals give a wider visual angle than any other lens.
- 2 Punktals are "custom-made"—they are individually computed for each power.
- 3 Punktals are surfaced on both sides by the Bausch & Lomb Optical Co. only.
- 4 Punktals are light in weight.
- 5 Punktals are as easily prescribed as ordinary torics.
- 6 Punktals are handsome in appearance.
- 7 Punktals will increase the satisfaction of your patients.
- 8 Punktals will enhance your professional reputation.
- 9 Punktals are carried in stock by Riggs Optical Company, so that practically any prescription can be filled immediately.

Please write for interesting Punktal Literature

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Agents for V. Mueller & Co., Makers of Surgical Instruments. Agents for the Celebrated "White Line" Equipment for Office and Hospital. Dealers in Everything Optical That Possesses Merit. Dependable, "On Time" Stock Service.

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ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. IX. Norfolk, Nebraska, November, 1924 No. 11

CALCREOSE

HOW TO GIVE CREOSOTE



POWDER
TABLETS
SOLUTION



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Samples of Tablets on Request

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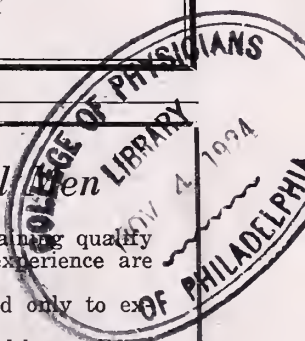
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SPECIAL CLINICAL COURSE

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The entire morning will be devoted to a practical clinic at LORD LISTER HOSPITAL.

The afternoon will be taken up with papers and lectures by prominent specialists. After a full day of hard work the evening banquet will serve to relax the mind and body.

These meetings are open to all physicians in good standing.

Bring along any interesting clinical cases you have. No fee is charged for the course and we know you will go home feeling you have gained much in a practical working knowledge of these modern therapeutic agents.

The Lewis Gregory Cole G. I. films will be shown.

Arrangements have been made for several days instruction in technic. This will be practical work and not theoretical so what you see and hear you will be able to use to advantage in your own practice. You are welcome regardless of the make of your equipment.

MAGNUSON

X-RAY CO.

Omaha, Neb.

THE CHIEF REASON

FOR THE PHYSICIAN'S FEEDING THE BABY
IS TO INSURE NORMAL HEALTHY GROWTH

COW'S MILK MODIFICATIONS seem at present to be the safest and most adaptable food for the artificially fed infant.

Diluted cow's milk, with an added carbohydrate, meets the nutritional demands of a great majority of babies.

DEXTRI-MALTOSE, in addition to being the most easily assimilated form of carbohydrate, is marketed to the laity without directions.

The only manner in which instructions reach the mother is through her doctor. The Physician, then, CONTROLS his infant feeding cases.

TO BE ON THE SAFE SIDE

As a prophylactic against Scurvy, Physicians prescribe orange juice.

To insure against Rickets, an extremely potent Cod Liver Oil is invaluable.

MEAD'S CERTIFIED COD LIVER OIL

A dependable Cod Liver Oil of known potency, biologically tested for its antirachitic value.

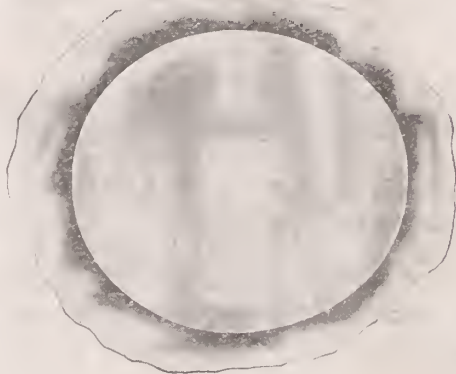
MEAD'S CERTIFIED COD LIVER OIL is of such potency that sufficient quantities, both to cure and prevent rickets, can be added directly to the Feeding Formula without upsetting the fat proportions of the diet or causing indigestion in the baby.

(*Literature and liberal samples of MEAD'S CERTIFIED
COD LIVER OIL sent at the Physician's request.*)



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Just a minute, Please!



A new lens in a new shape

Cross Trifocal
LENSES

Three pairs of glasses in one! The distance and reading parts are monocentric. It is monocentricity that eliminates the "jump" at the dividing line.

To eliminate the "jump" gives a calmness to the nerves, a comfort like that realized with the use of single vision lenses.

The third field makes that "in between distance" clear and distinct.

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INDEX NUMBER

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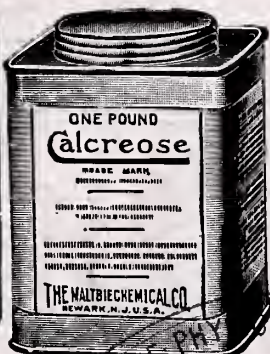
Norfolk, Nebraska, December, 1924

No. 12

CALCREOSE

CALCIUM AND TUBERCULOSIS

*Samples
of Tablets
on Request*



CALCIUM starvation has been suggested by phthisiologists as a factor in the etiology of pulmonary tuberculosis. By prescribing CALCREOSE some of the needed calcium may be supplied.

CALCREOSE (calcium creosote) is a mixture containing in loose chemical combination approximately equal weights of creosote and lime. It has the pharmacologic activity of creosote as used in the adjuvant treatment of tuberculosis, but differs from creosote in that it apparently does not have any untoward effect on the stomach.

POWDER — TABLETS — SOLUTION

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Do Not Condemn Diathermy

Failures and Criticisms of Physiotherapy are well founded — first, because of improper, faulty and untrained technique — second, because of inferior equipment, under size and over-rated apparatus, equipment made to sell to the uninformed and to those who do not investigate.



Best by Test

Results obtained in Diathermy depend on MORE than a grand looking — well finished cabinet — a large number of useless Modalities, — a long list of equally useless accessories or a fluent sales talk.

When using or prescribing Diathermy, insist upon a POSITIVE and DEFINITE established TECHNIQUE — then see that the proper instrument is used depending upon apparatus — having a Resonant—Non-far-adic current—a Ten Point Tungsten Tipped open typed spark gap—High Voltage and Amperage — High Frequency oil immersed large transformer.

All of these qualities are found in the Standard Jr. High Frequency.

That is why the Standard Jr. High Frequency is being used by the largest hospitals, clinics and nationally known men of the profession throughout the country.

Write us for particulars of the Standard, Jr. — Also a list of USERS whom you know.

THE WESTERN X-RAY COMPANY

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INFANT DIET



MATERIALS

A STANDARDIZED COD LIVER OIL FOR THE CONTROL OF RICKETS

RECENT PEDIATRIC LITERATURE has demonstrated conclusively the value of Cod Liver Oil in the prevention and cure of rickets.

BUT SMALL AND UNIFORM DOSES can only be given when an oil of uniform high potency is available.

THE HIGH POTENCY OF MEAD'S CERTIFIED COD LIVER OIL is assured by careful supervision of every step in its preparation, and by making sure that only fresh cod livers are used from fish in the best physiological condition.

THE UNIFORMITY OF POTENCY is assured by biological tests of each batch of MEAD'S CERTIFIED COD LIVER OIL before marketing.

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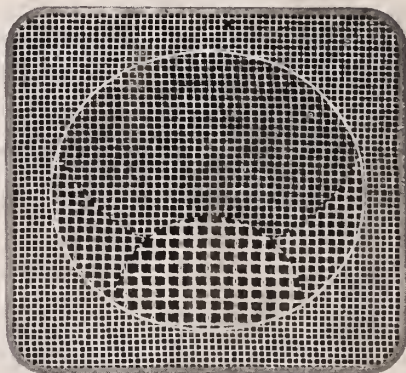
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